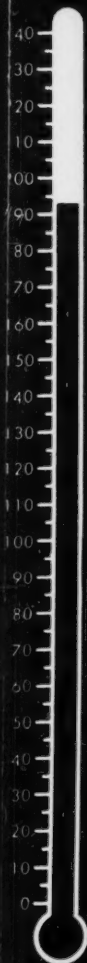


BUSINESS WEEK

APR. 30, 1949



George T. Christopher: Has an automatic transmission for Packard's Golden Anniversary (page 6)

BUSINESS
WEEK
INDEX

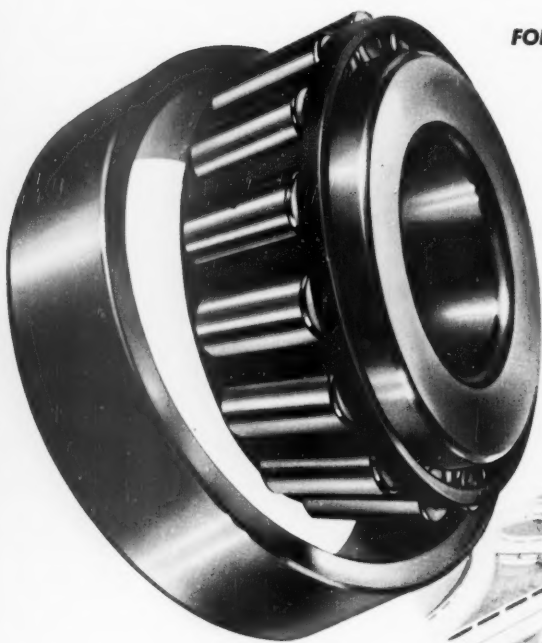
A MCGRAW HILL PUBLICATION

BOWER BEARINGS ARE



SPHER-O-HONED

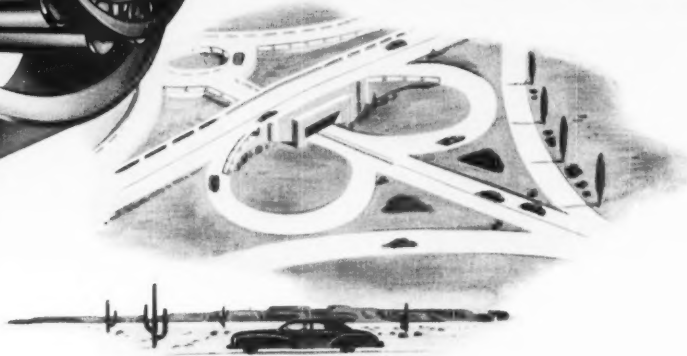
FOR GREATER PRECISION . . . SMOOTHER PERFORMANCE



Ask any automotive engineer. He'll tell you that bearing precision and smoothness go hand in hand—that greater precision means smoother, more dependable performance. That's why the word SPHER-O-HONED is so important to you. It stands for significant design and engineering improvements—spherical roll-ends and cone flange, a large oil groove, and superior finish—that mean greater accuracy, less initial wear, better lubrication, and longer bearing life. It means lower installation costs too. In many applications, Bower SPHER-O-HONED Bearings can be installed permanently—eliminating "running in" and costly "final" adjustment.

If you're looking for quiet, trouble-free bearing performance for your product, investigate Bower SPHER-O-HONED Bearings. You'll find that for smoothness and precision—for all-around performance—they're your best bearing buy.

BOWER ROLLER BEARING COMPANY • DETROIT 14, MICHIGAN



BOWER

ROLLER BEARINGS





"How will you have your 357 lbs. of paper this year, sir?"

In newspapers, magazines and matches? Boxes, bags and books? Or some other way?

Yes, the average American uses 357 pounds of paper products a year!

The pulping paper mills of the U. S. and Canada roll out a truly prodigious amount of paper in every conceivable weight and texture—28-million tons annually.

In 1948 a single U. S. newspaper used enough newsprint to stretch to the moon 18 times! Yet, while some 24-billion copies of books, magazines and newspapers are published each year, paper used in printing and publishing consumes only about 33% of the industry's output.

The remainder goes into boxes, bags, writing papers, wrapping papers, specialty papers, building board and paper, and containers to package everything from cement to cinnamon cookies.

Wood pulp, from which paper is made, is also used to make molded wood products, tire cord, rayon, cellophane and other synthetics.

The industry's deep-rooted interest in woodland conservation is evidenced by the planting of millions of seedlings every year, its scientific growth of trees as a crop, and its broad educational activities.

Continuing research, guided and encouraged by forward-looking management, is largely responsible for the paper industry's achievements. Today's research objectives include new uses for pulp and paper, im-

proved quality, lower costs, and wider by-product salvage.

The pulp and paper industry may well be proud of its plants, its products, and its progress.

Industrial progress, in turn, springs from industrial profits. For out of profits, companies build new factories, buy modern tools and equipment, provide more jobs, and pay a return on the capital which is so essential to the continuing industrial development of America.

BANKERS TRUST COMPANY NEW YORK

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

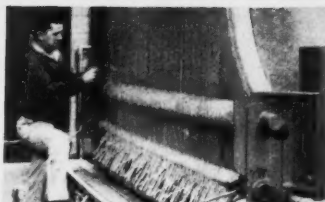


Everybody's trying

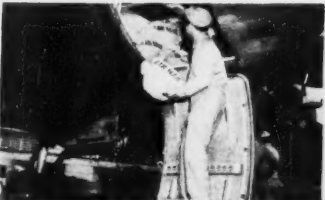


A 4-mile-long net like the one shown here is an important investment for fishermen. In the past, these nets had to be replaced just about every season. But nylon resists deterioration by salt water and marine organisms; users say they expect their nylon nets to last at least several years.

to lower costs



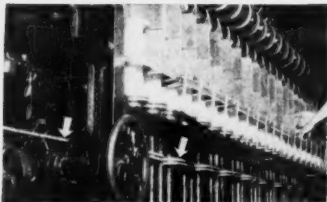
Nylon filter cloth used in sewage purification plant resists powerful chemical and bacteriological action. Lasts for three months where ordinary fabric had to be replaced in three days.



Nylon air mail bags promise enormous savings on shipping costs for the Post Office Department. Because of its lighter weight, a nylon bag saves \$1.95 in air transportation costs on a single trans-continental flight.



Nurses can save \$100 a year with nylon uniforms. They last longer . . . reduce laundry expense. A nylon uniform is easily washed, dries rapidly and is then ready to wear—for properly heat-set nylon fabrics need little or no ironing.



Nylon solves problems of flex fatigue failure of roving bands on spinning machines. With nylon bands this machine ran for six months without a single failure. Previously a band change had to be made nearly every day.

AND VERSATILE **NYLON** FIBERS HELP YOU MEET THE DEMAND FOR COST-CUTTING PRODUCTS

Fishermen want to cut costs—and are doing so with longer-lasting nylon nets. A filter-cloth user wants to economize—and saves \$1500 with \$350 invested in nylon fabric. The Post Office Department uses light-weight nylon air-mail bags to cut dead-weight shipping costs 85%. And nurses reduce maintenance and replacement costs of uniforms 70% by wearing nylon uniforms.

Whoever he is, today's customer is calling for a product that will help him evade current cost squeezes. Products improved with nylon fibers are the answer in many cases. Perhaps nylon can increase the efficiency of a product you make—or a product you use!

Now is the time to re-check the cost-cutting properties of **NYLON** fibers

- | | |
|--------------------------------|--|
| () High strength—light weight | () Can be heat set to hold shape |
| () Toughness—durability | () Resistance to ALKALIES—HYDROCARBONS—OILS—PETROLEUM |
| () Elasticity—flexibility | () Not weakened by MILDEW or SOIL ROT. |
| () Low moisture absorption | |
| () Quick drying—easy cleaning | |

Let us help YOU net more profits with **NYLON**

Write us about your textile problems. Du Pont's knowledge is at your disposal to help fit nylon to your needs.

And find out the many ways in which industry is now using nylon to cut costs by increasing the efficiency of production methods . . . improving present products . . . or creating new ones. Write for "Nylon Textile Fibers in Industry" . . . 32 fact-filled pages on nylon's remarkable combination of properties and their industrial applications.



Address Room 6510-H, Nylon Division, E. I. du Pont de Nemours & Company, (Inc.), Wilmington 98 Delaware.

BETTER THINGS FOR BETTER LIVING...THROUGH CHEMISTRY



For **NYLON**...for **RAYON**...for **FIBERS** to come...look to **Du Pont**!



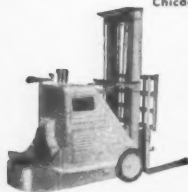
MOBILIFT DOUBLES the value of your Materials Handling Dollar

Every dollar saved on material handling costs is a dollar added to your profit. For this reason hundreds of industries, both large and small, have turned to Mobilift for lower handling costs. Field tests and actual operation have proved Mobilift saves in the following ways:

- Low first cost—low operating cost.
- Maneuverability increases handling speed.
- Loads, hauls, stacks, without rehandling.
- Increases the effectiveness of labor.
- Operates in cramped quarters—saves floor space.

Let us show you how you can "Mobilize" for lower handling costs. Coupon below will bring complete literature on Mobilift operation.

DISTRICT SALES OFFICES
New York Berkeley Atlanta
Chicago Los Angeles Dallas



MOBILIFT

"The MIGHTY MIDGET"

MOBILIFT CORPORATION

835 S. E. Main Street, Portland 14, Oregon B-W

Please send me your illustrated folder on Mobilift operation.

Name _____
Firm _____
Address _____
City _____ State _____

BUSINESS WEEK

EDITOR
Ralph Smith

EXECUTIVE EDITOR
Kenneth Kramer

MANAGING EDITOR
Edgar A. Grunwald

ASST. MANAGING EDITOR
Harry Lee Waddell

ASSOCIATE MANAGING EDITOR
Robert B. Colborn

News Editors, Cora Carter, Frank J. Fogarty, Richard M. Machol, Carl Rieser, Guy Shipley, Jr. • Illustration, Jacquelyn Judge, C. Peter Davis

DEPARTMENT EDITORS

Business Outlook, Clark R. Pace • Business Policy, John L. Cobbs • Finance, William McKee Gillingham • Foreign, Howard Whidden • Labor, Marilyn S. Pitzler • Law, Joseph A. Gerardi • Marketing, James C. Nelson, Jr. • Production, John Sasso • Agriculture, Arthur L. Moore

EDITORIAL ASSISTANTS

J. P. Chamberlain (Asst. Finance Editor), Jane E. Clark, Jean Drummond, Mary Flaherty, Charles M. Garvey, John Harthorne, John Hoffman, Robert B. McIntyre (Asst. Marketing Editor), Nathaniel McKitterick, Arthur Richter, Edward T. Townsend (Asst. Labor Editor), Doris I. White • Statistician, Gertrude Charlott • Librarian, Mildred L. Washburn

ECONOMICS STAFF

Dexter M. Keezer, Sanford S. Parker, William F. Butler, Peter French, Robert P. Ulin

DOMESTIC NEWS SERVICE

Chicago Bureau, James M. Sutherland, Mary B. Stephenson, Dorothy Miller • Cleveland Bureau, Robert E. Cochran • Detroit Bureau, Stanley H. Bruns, S. H. Brown • San Francisco Bureau, Richard Lamb, Mardell Burns • Washington Bureau, George Doying, Glen Bayless, Thomas A. Falco, Carter Field, Joseph Gambetta, Seabrook Hull, Louise Jacobson, Sam Justice, Paul Leach, Jr., Donald O. Loomis, Gladys Montgomery, Seymour Nagan, Caroline Robertson, Vincent Smith, William B. Whitchard, Jr. • Correspondents: Akron, Albuquerque, Atlanta, Baltimore, Bangor, Birmingham, Boston, Buffalo, Charlotte, Cincinnati, Columbus, Dallas, Denver, Des Moines, Evansville, Houston, Indianapolis, Kansas City, Knoxville, Los Angeles, Louisville, Madison, Memphis, Miami, Minneapolis, New Orleans, Oklahoma City, Omaha, Philadelphia, Pittsburgh, Portland (Ore.), Providence, Richmond, Rochester, Salt Lake City, San Diego, Seattle, St. Louis, Spokane, Topeka, Tucson, Wichita, Wilmington, Fairbanks (Alaska), San Juan, Honolulu

FOREIGN NEWS SERVICE

Editor, Russell F. Anderson • London, Frederick Brewster • Paris, Boyd France • Frankfurt, John Christie • Mexico City, John Wilhelm • Moscow, Andrew Steiger • Tokyo, Alpheus Jessup • Bombay, Joseph Van Denburg, Jr. • Melbourne, Herbert Leopold • Rio de Janeiro, Henry Bagley • Buenos Aires, William Mizelle • Correspondents: Amsterdam, Bangkok, Batavia, Bogota, Cairo, Caracas, Copenhagen, Geneva, Johannesburg, La Paz, Lima, Manila, Milan, Montevideo, Ottawa, Prague, Santiago, Shanghai

PUBLISHER

Paul Montgomery

ADVERTISING MANAGER

H. C. Sturm

BUSINESS WEEK • APRIL 30 • NUMBER 1026

(with which are combined The Annalist and the Magazine of Business) • Published weekly by McGraw-Hill Publishing Company, Inc., James H. McGraw (1860-1948), Founder • Publication Office 129 North Broadway, Albany, N. Y. • Postmaster: If undeliverable, notify publisher on Form 3578-P • Editorial and Executive Offices, 120 W. 42nd St., New York 18 • James H. McGraw, Jr., President; Curtis W. McGraw, Vice-President and Treasurer; Eugene Duffield, Executive Assistant for Publications; Nelson Bond, Director of Advertising; Joseph A. Gerardi, Secretary.

Address correspondence regarding subscriptions to J. E. Blackburn, Jr., Director of Circulation, Business Week, 90-129 N. Broadway, Albany 1, N. Y., or 330 West 42nd St., New York 18. Allow ten days for change of address.

Subscriptions to Business Week are collected only from management-men in business and industry. Position and company connection must be indicated on subscription orders.

Single copies 25c. Subscription rates—United States and possessions \$6.00 a year, Canada \$7.00 a year, Pan American countries \$10 a year • All other countries \$20 a year • Entered as second class matter Dec. 4, 1934, at the Post Office at Albany, N. Y., under Act of Mar. 3, 1879 • Printed in U. S. A. Copyright 1949 by McGraw-Hill Publishing Co., Inc. — All Rights Reserved.

BUSINESS WEEK • Apr. 30, 1949



You have been elected

It is time to recognize anew the obligations of leadership--the responsibility that attends your place in the business life of the community.

That there are influences at work right now--every day--attempting to disrupt and destroy the American way of life--has been plainly demonstrated. These forces, disguised though they be, are more active - more determined - more dangerous than ever before.

To save individual liberty and personal freedom--corner-stones of our civilization--may not be easy. As a leader you are called upon continuously to help form and direct a militant public opinion. Only by the united, vigilant efforts of all citizens of good will, those who cherish our principles of government and our ideals, will we maintain our invaluable heritage of liberty, justice and freedom.

The Youngstown Sheet and Tube Company

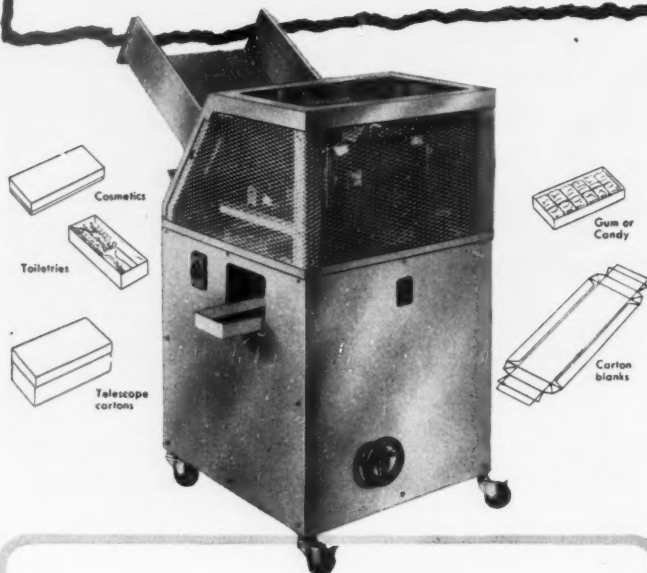
General Offices--Youngstown 1, Ohio

Export Offices--500 Fifth Avenue, New York

MANUFACTURERS OF CARBON, ALLOY AND YOLOY STEELS

ELECTROLYTIC TIN PLATE - COKE TIN PLATE - WIRE - COLD FINISHED CARBON AND ALLOY BARS - PIPE AND TUBULAR PRODUCTS - CONDUIT - RODS - SHEETS - PLATES - BARS - RAILROAD TRACK SPIKES.

SETS UP 90 DOUBLE-WALL CARTONS PER MINUTE!



Step up output of your packaging line with the General Mills Finished Edge Carton Set-up Machine. It forms open-top double-wall trays or cartons from die-cut blanks at speeds up to 90 per minute—replaces costly, slow hand methods. It also forms telescopic boxes used for packaging and displaying candy, gum, pharmaceuticals, cosmetics and pre-packaged foods.

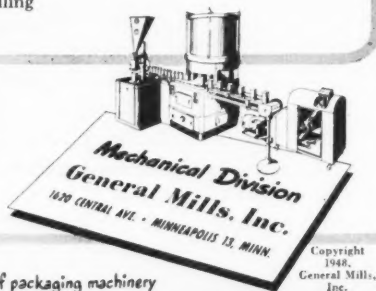
Operation is entirely automatic. One person can supply carton blanks to several machines and assist with the filling

operation besides.

A variety of carton sizes are produced, each neatly squared with sturdy, straight sides. The machine occupies only three square feet of floor space and plugs into your regular 110-volt circuit.

Write today for details about how this machine can cut your packaging costs, increase your output. Address Dept. B-49, General Mills, Inc., 1620 Central Ave., Minneapolis 13, Minn.

The companion General Mills Tray-Lock Machine sets up lock-type cartons from flat, unglued blanks. Details on this and other General Mills packaging machines (ice cream carton set-up and closing machines, Vacuflow powder fillers) sent on request.



Made by one of the world's largest users of packaging machinery

THE DEPARTMENTS

Automotive	31
Business Abroad	117
Business Outlook	9
Finance	88
International Outlook	115
Labor	100
Marketing	76
The Markets	98
New Products	54
Production	40
Readers Report	58
Report to Executives	67
The Trend	124
Washington Outlook	15

THE COVER

Up to a few years ago, you could expect the president of the 50-year-old Packard Motor Car Co. to have a Blue Book rating and probably a heavy layer of culture.

Not so with George T. Christopher, president since 1942. The homespun Christopher, son of an Indiana coal miner, isn't much interested in social life at Detroit's fashionable Grosse Pointe. He would rather bowl an average 170 with the boys from the shop—or run his 750-acre farm in Ohio.

• **Climb**—Christopher came up via the engineering and production route. Like many others in the auto business, he did his stint at General Motors.


After graduation from Rose Polytechnic in 1911, he got his first job at the Portsmouth (Ohio) Gas Engine Co. Next he was assigned by a Toledo bank to run the Turnbull Wagon Co. of Defiance, Ohio. He put the business on its feet, then went back to Indiana to work for Standard Mfg. Co., auto-wheel maker at Terre Haute.

Then came several automotive jobs. After a World War I lieutenantcy at Dodge as inspector of recoil mechanisms, Christopher joined G.M. as Delco-Remy's supervisor of manufacturing. He went to Oldsmobile in 1927 as chief inspector; in 1929 he became Pontiac vice-president of manufacturing; in 1932 he took the similar job at Buick.

Two years later Packard lured him into becoming its vice-president for manufacturing. His assignment: to build a low-priced car. He did, and the directors were impressed.

• **Anniversary**—Next week Christopher will preside at the dealers' showing of Packard's Golden Anniversary models, which have a new automatic transmission. His associates can picture him now: chomping on a cigar, blinking behind his glasses, and embroidering his quiet remarks with a Will Rogers kind of humor which has been distilled from lengthy contemplation of the world and its works.

—Complete story on Packard transmission starts on page 31. Cover painting by Ralph Iligan



**The original
moisture-proof packaged
utility bond**

Moistrite Bond

A product of The Mead Corporation, Moistrite Bond is only one of a family of low-priced Moistrite papers for everyday business uses. Others are Moistrite Mimeo Bond, Moistrite Ledger, Moistrite Opaque, Moistrite Duplicator.



THE MEAD CORPORATION • "Paper Makers to America"

The Mead Sales Company, 230 Park Avenue, New York 17

Sales Offices: Mead, Dill & Collins, and Wheelwright Papers • Philadelphia • Boston • Chicago • Dayton



What should you expect from your group insurance?

If correctly planned it can be the best and most economical way to solve many employee relations problems.

What do we mean by correct planning?

A plan that is really geared to meet your Company's requirements and objectives, and one that is flexible enough to allow change with changing conditions.

How do you get this type of planning?

Select an insurance company with wide group experience, but also consider carefully the qualifications and experience of the men who will work directly with you for that company.

Why do so many important organizations* choose Connecticut General?

**Listing on Request*



THE PROTECTED PAY-ENVELOPE PLAN

For careful, competent, individual study of your situation, investigate Connecticut General's Protected Pay Envelope Plan. It is equally applicable to the needs of large or small organizations. It provides all forms of group protection: life, accident and sickness, hospital, surgical and medical expense insurance and pension plans, singly or in combination.

Connecticut General has been writing group insurance for 36 of its 84 years in business . . . and was one of the first to enter this field. But beyond this the particularly careful selection and training of Connecticut General men assures you of unusually well qualified men to handle your problems in your territory.

A CONNECTICUT GENERAL GROUP MAN CAN CALL ON YOU ANYWHERE IN THE UNITED STATES

CONNECTICUT GENERAL
LIFE INSURANCE COMPANY
HARTFORD, CONNECTICUT

LIFE, ACCIDENT, HEALTH AND
GROUP INSURANCE AND ANNUITIES

BUSINESS OUTLOOK

BUSINESS WEEK

APRIL 30, 1949



Labor trouble looks more and more ominous for this summer.

A Ford strike still is possible if not probable. A coal walkout seems almost certain, at least in the southern mines (which produce about one-third of the total supply).

Steel is another story. Most observers say, "No."

Ernest T. Weir, National Steel chairman, doesn't share this optimism. He told his annual meeting of stockholders this week that hold-the-line policies on wages are likely and strikes not at all improbable.

Users of coal are stockpiling against a possible strike. The steel industry is one of these. And users of steel are stockpiling in some cases against (1) a steel strike, or (2) a coal strike that would stop steel.

Labor developments this summer will have a good deal to do with shaping both the business and the price curves.

Everyone knows that strikes are deflationary in times like these. Strikers lose pay, purchasing power.

Moreover, lost production doesn't have to be made up—there's no longer a pent-up demand for much of anything.

However, the threat of labor trouble now tends to support industrial prices temporarily. Management has to know what its wage bill is going to be before it can make any substantial price cuts on its products.

Steel and copper producers would be much readier to spur demand with good price cuts if they knew they could settle with labor for a few cents an hour. So might some of the auto companies.

Prices in 1948-49 are following a historical pattern—agriculture down first and fastest, industrial less and later.

Farm prices, at 196 in the wholesale average last June, have fallen below 170. That's a decline of 10 months and nearly 15%.

Industrial prices at wholesale didn't show any sign of weakness until December. Even now, they are down no more than 3%.

Whether industrial commodities will continue to follow farm prices down depends, in the long run, on business activity (page 21).

Farm prices already have had two-thirds as much of a drop, percentage-wise, as in the sharp recession of 1937-38. Industrial prices, on the other hand, haven't had even a third as much of a decline.

Of course, there's no 1937-38 business letdown in sight for 1949. The only reason for expecting much of an industrial price dip at wholesale is the recent spot-market drop in raw materials (BW-Apr.23'49,p10).

Prices of finished products are sticky. High wage rates hold them up. So do high fixed costs, now that profits are declining (page 19) and break-even points begin to look dangerously close.

Volume and value of inventories and goods on order should be down pretty sharply for the first half of 1949.

Lower prices help to wash down dollar-value totals. More important still: Prompter deliveries make it unnecessary to carry large stocks.

J. D. A. Morrow, president of Joy Manufacturing, tells that story:

BUSINESS OUTLOOK (Continued)

BUSINESS WEEK

APRIL 30, 1949

"Our unfilled purchase orders were \$16½-million last September. On Mar. 31, 1949, with deliveries quoted on a 30- to 90-day basis, we found it possible to reduce our outstanding unfilled purchase commitments to less than \$7-million."

Somewhat similar is the performance of American Brake Shoe. Its inventories declined from \$17.7-million to \$16-million in the first quarter.

Manufacturing inventories have plenty of room to go down. They hit a peak in January 199% above the 1939 average and declined only very slightly in February.

That makes them look high in the light of the slump in new orders. Value of new orders received monthly has been down steadily since June with but one exception. They are now more than 10% below their June level.

With total manufacturing output remaining very high, factories have been cutting steadily into unfilled-order backlogs. That total has been whittled by about 6% in six months.

Steel operations seem to be in a slow but prolonged downswing.

The industry's output is down again this week—even though it is scheduled at no less than 97½% of capacity.

Wickwire Spencer is the latest company to report slackening. It has reduced operations in Buffalo to between 75% and 80% of capacity.

New dwelling units started in March fell behind a year earlier for the seventh month in a row. "Starts" numbered 62,000 last month against 75,100 in March of 1948. Last month's total was the best since November, however.

Auto production now is just about the last completely strong spot among our major industries. In the debate about how long it will hold, here are some inescapable facts.

Not everyone has yet been able to get the car he wants—and that goes for many who have bought new ones.

And there still are a lot of wrecks wobbling around on four wheels (BW-Dec. 25 '48, p19). In fact, the Dept. of Commerce came up this week with a new estimate that one of each five cars on the road is over 12 years old.

That means some 6-million are beyond normal average junking age.

The vigor of the farm market is often questioned these days. The price drop has clipped farm purchasing power, of course, because costs are down hardly at all. But the real question is: Has it clipped farm spending?

A dip below a year ago in fertilizer sales during January and February indicated that spending perhaps was down.

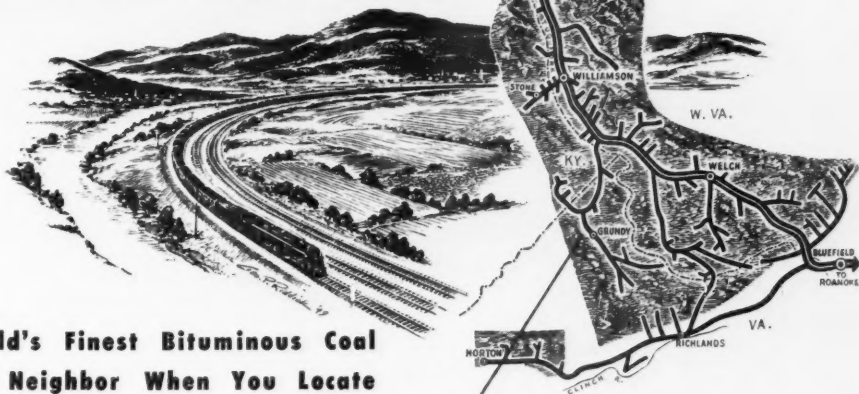
But you can write that off. March came back stronger than ever, breaking all previous monthly records.

The annual rate of personal income fell by \$4-billion from December to February, revised figures issued by the Dept. of Commerce indicate.

That helps account for the drop in retail sales so far this year. People spend more cautiously when they are earning less money.

First-quarter retail sales (seasonally adjusted) fell about 3% below the rate of the last quarter of 1948. This coincided with less business buying (of inventory) to cause the over-all dip in demand thus far in 1949.

THE GREAT COAL FIELD SECTION OF THE *Land of Plenty*



The World's Finest Bituminous Coal Is Your Neighbor When You Locate Your Plant in the Land of Plenty

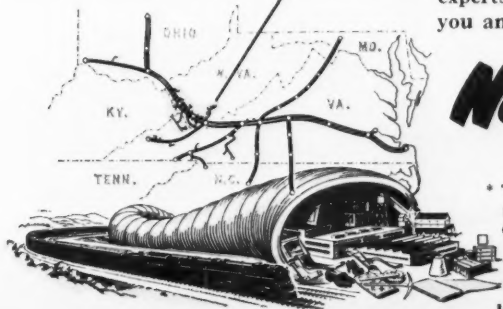
If coal serves you, this rich section in the Land of Plenty* is a good neighbor for your new plant. The Norfolk and Western Railway can tell you exactly how this region can fit into your plant location plans.

In volume, quality and accessibility of its product, the Coal Field Section is pre-eminent. The wide variety of the fine Bituminous coal mined in the area meets the exacting requirements for industrial, domestic and by-product uses. Located in southwestern Virginia, southern West Virginia and eastern Kentucky, in the heart of the railway's territory, this coal empire is served by the N. & W.'s main line

and many branches.

No matter where you locate in the Land of Plenty, the world's finest Bituminous coal is readily available to your plant. The N. & W. owns nearly 50,000 sturdy coal cars of varied capacity and a fleet of powerful, modern locomotives, and hauls an average of more than 50,000,000 tons of coal a year. This railroad is equipped to deliver coal to your factory, in any volume, swiftly and efficiently.

If you are interested in a desirable plant site in or near the Coal Field Section, write to the Industrial and Agricultural Department, Drawer B-205, Norfolk and Western Railway, Roanoke, Va. Factory location specialists of this department and the railroad's coal experts are qualified by years of experience to help you analyze the facts.

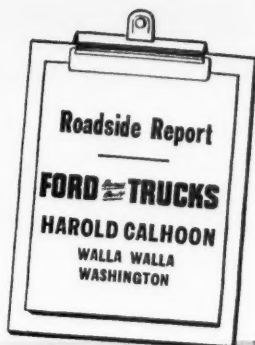


Norfolk and Western RAILWAY

* The Land of Plenty — the six great states served by the Norfolk and Western — Virginia, West Virginia, Ohio, North Carolina, Maryland and Kentucky.

LAND OF PLENTY

"Our FORD F-8 SAVES 1½ hours in 90 miles!"



"OUR DRIVER reduced average travel time between Portland and the Dalles, a distance of approximately 90 miles, by 1½ hours with the F-8 Big Job," reports Harold Calhoon, of the State Line Lumber Company. "This distance is through the Columbia Gorge, which has excessive curves and grades. Our driver states that the F-8 Big Job, which mounts a dual-axle semi with 16-ton load, has worlds of power and handles and rides as easily as a car."

With Harold Calhoon, as with thousands of other extra heavy duty truck users, the new Ford 145-horsepower Big Jobs are all the go! One reason why . . . engine power second to none in its class. Second reason . . . the luxury of the Ford Million Dollar Cab. Third reason . . . Bonus Built construction, a feature of every one of over 139 Ford Truck models. Bonus Built is the superstrong construction that contributes to long truck life. Life insurance experts prove Ford Trucks last longer!



BUILT STRONGER TO LAST LONGER

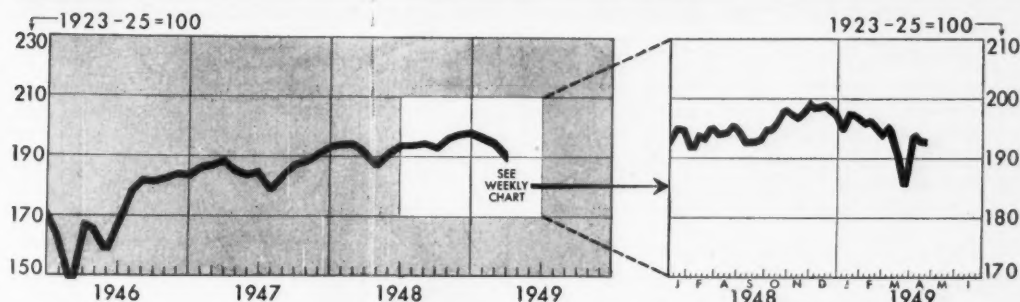
USING REGISTRATION DATA ON 5,444,000 TRUCKS,
LIFE INSURANCE EXPERTS PROVE FORD TRUCKS LAST LONGER!

ONLY THE FORD BIG JOB HAS ALL THESE FEATURES!

- ★ New 145-h.p. Ford V-8 engine for top performance.
- ★ Ford exclusive concentric dual-throat carburetor for more power, more economy.
- ★ New heavy duty 5-speed transmissions for operating flexibility.
- ★ Big Ford rear brakes for sure-footed stopping; 16-inch by 5-inch in the F-8.
- ★ Ford Super Quadrax 2-speed axle with vacuum shift for performance flexibility in Model F-8 (single speed axle also available); single-speed Quadrax Hypoid Axle in Model F-7.
- ★ Large diameter (10-inch) wheel bolt circle with 8 studs to allow for extra-strong hub construction.
- ★ Million Dollar Cab with Ford Level Action suspension for greater driving comfort.
- ★ Nationwide service from over 6,400 Ford Dealers.
- ★ Ford Bonus Built construction for long truck life.

Gross Vehicle Weight Ratings: F-8 up to 21,500 lbs., F-7 up to 19,000 lbs. Gross combination ratings: F-8 up to 39,000 lbs., F-7 up to 35,000 lbs.

FIGURES OF THE WEEK



Business Week Index (above) *193.2 †193.4 186.9 191.1 162.2

PRODUCTION

Steel ingot operations (% of capacity).....	97.5	98.4	99.8	86.6	97.3
Production of automobiles and trucks.....	134,598	†131,821	121,341	107,093	98,236
Engineering const. awards (Eng. News-Rec. 4-week daily av. in thousands)....	\$24,571	\$23,997	\$26,040	\$23,266	\$19,433
Electric power output (million kilowatt-hours).....	5,326	5,343	5,404	5,027	3,130
Crude oil (daily average, 1,000 bbls.).....	4,916	4,912	5,130	5,415	3,842
Bituminous coal (daily average, 1,000 tons).....	1,908	†1,880	493	1,288	1,685

TRADE

Miscellaneous and L.C.L. carloadings (daily average, 1,000 cars).....	74	73	74	81	86
All other carloadings (daily average, 1,000 cars).....	54	53	27	50	52
Money in circulation (millions).....	\$27,408	\$27,507	\$27,423	\$27,718	\$9,613
Department store sales (change from same week of preceding year).....	+7%	+7%	-16%	+8%	+17%
Business failures (Dun & Bradstreet, number).....	198	184	166	100	228

PRICES (Average for the week)

Cost of Living (U. S. Bureau of Labor Statistics, 1935-39 = 100), March..	169.5	169.0	166.9	105.2
Spot commodity index (Moody's, Dec. 31, 1931=100).....	345.8	351.0	368.8	416.2	198.1	138.5
Industrial raw materials (U. S. Bureau of Labor Statistics, Aug., 1939=100)....	232.5	†235.7	254.9	271.7	138.5	146.6
Domestic farm products (U. S. Bureau of Labor Statistics, Aug., 1939=100)....	286.3	288.1	291.3	372.5	146.6	146.6
Finished steel composite (Steel, ton).....	\$94.45	\$94.91	\$97.23	\$81.14	\$56.73	19.48
Scrap steel composite (Iron Age, ton).....	\$22.92	\$22.75	\$31.17	\$40.33	19.48	12.022¢
Copper (electrolytic, Connecticut Valley, lb.).....	20.000¢	21.200¢	23.450¢	21.500¢	12.022¢	12.022¢
Wheat (Kansas City, bu.).....	\$2.25	\$2.27	\$2.23	\$2.46	\$0.99	3.38¢
Sugar (raw, delivered New York, lb.).....	5.62¢	5.65¢	5.69¢	5.33¢	3.38¢	13.94¢
Cotton (middling, ten designated markets, lb.).....	33.19¢	33.20¢	32.66¢	37.78¢	13.94¢	13.94¢
Wool tops (New York, lb.).....	\$1.554	\$1.534	\$1.533	\$1.753	\$1.281	22.16¢
Rubber (ribbed smoked sheets, New York, lb.).....	18.40¢	18.31¢	19.00¢	23.21¢	22.16¢	22.16¢

FINANCE

90 stocks, price index (Standard & Poor's Corp.).....	117.0	119.2	119.3	124.3	78.0
Medium grade corporate bond yield (30 Baa issues, Moody's).....	3.45%	3.45%	3.46%	3.45%	4.33%
High grade corporate bond yield (30 Aaa issues, Moody's).....	2.70%	2.70%	2.70%	2.78%	2.77%
Call loans renewal rate, N. Y. Stock Exchange (daily average).....	14-14½	14-14½	14-14½	14½	1.00%
Prime commercial paper, 4-to-6 months, N. Y. City (prevailing rate).....	14-14½	14-14½	14-14½	14½	4-4½

BANKING (Millions of dollars)

Demand deposits adjusted, reporting member banks.....	45,758	45,237	45,473	46,718	†127,777
Total loans and investments, reporting member banks.....	61,271	61,100	61,749	63,454	†132,309
Commercial and agricultural loans, reporting member banks.....	14,300	14,543	14,962	14,205	†16,963
Securities loans, reporting member banks.....	1,987	1,573	1,926	1,668	†1,038
U. S. gov't and gov't guaranteed obligations held, reporting member banks.....	32,766	32,767	32,680	35,643	†115,999
Other securities held, reporting member banks.....	4,363	4,411	4,373	4,331	†14,303
Excess reserves, all member banks.....	880	780	730	701	5,290
Total federal reserve credit outstanding.....	22,050	22,056	22,512	20,966	2,265

*Preliminary, week ended April 23rd.

†Revised.

††Estimate (BW—Jul.12'47,p16)

‡Date for "Latest Week" on each series on request.



"Drink up...it's Philadelphia's most famous invention!"

It's an ice cream soda, of course. A lot of famous things have come out of Philadelphia, but none is better known than this happy mixture, first compounded here more than 70 years ago.

Today, fine ice cream is still a Philadelphia tradition—a big industry and an important part of the Philadelphia picture.

If you're doing business here, in America's third largest market, we at The Pennsylvania Company would like to help you understand this pic-

ture thoroughly. For *knowing* the city helps business prosper here.

Firms of all sizes depend upon The Pennsylvania Company for this understanding; thousands of small businesses use our services, as well as two out of three of the nation's largest corporations.

We are in unusually close touch with the entire business community because our 19 offices—more than any other local bank—cover every major part of the city and suburbs. Our

records are at your command at all times. Alert, modern-minded officers will give full attention to *any* business problem. We'll speed your check clearances by Air Mail and we maintain a 24-hour-a-day transit department.

As a leading commercial bank, we'll be glad to help make you a member of the prosperous Philadelphia business "family." We'll explain our services in detail if you drop us a line. Better still, stop in and see us.

19 OFFICES

**THE
PENNSYLVANIA
COMPANY**

for Banking and Trusts

FOUNDED 1812

PHILADELPHIA

MEMBER FEDERAL RESERVE SYSTEM

• FEDERAL DEPOSIT INSURANCE CORPORATION

WASHINGTON OUTLOOK



TRUMAN'S POINT 4 program is about ready for Congress.

It calls for around \$80-million in government grants for exporting American show-how to underindustrialized areas of the world.

It sets up government guarantees that investors can collect—in dollars—the money they put into Point 4 projects, as well as profits.

At the outset, however, government capital won't be used to build plants abroad.

The only unresolved issue is what kinds of risks the government guarantees will cover.

The minimum you can count on is the government underwriting your ability to convert foreign-currency proceeds into dollars.

There's a 50-50 chance that you will be protected against loss from expropriation, too. Commerce Secretary Sawyer argues that something like this is needed to tempt U. S. private capital into politically uncertain areas. Secretary of State Acheson would rather handle this problem by diplomatic agreements.

Some business groups have asked that the guarantees even cover acts of God and war. But there's no chance of this.

The Export-Import Bank has been picked to keep the books on the guarantees. But Acheson will keep the final say over which backward-area investments will be insured.

Ex-Im got the assignment because it has experience in industrial-development loans. Also, the bank has \$900-million of uncommitted funds to get things started without new financial demands on Congress.

ITALY WANTS TRANSPORT PLANES to start passenger-airline service between New York and Rome. It is dickering with the State Dept. for landing rights at La Guardia, and with ECA for the planes.

EXCISE-TAX CUTS are going to be tacked onto the bill to repeal the 10¢ penalty tax on margarine—in the Senate, at least.

Ever since war's end, pressure has been building up to get rid of the stiff wartime levies on so-called nonessentials—light bulbs, transportation, cosmetics, luggage, jewelry, furs, amusements.

Now, with business lagging, the yammering is even louder. And such Democratic Party big names as Paul Porter, Gael Sullivan, and ex-Rep. Robert

Ramspeck have been retained to work the Capitol corridors.

The Senate Finance Committee this week, by a 7-to-6 vote, refused to attach an omnibus excise-tax repealer as a rider to the margarine bill. But Sen. Ed Johnson of Colorado, longtime friend of the railroads and the brotherhoods, is still determined to force roll-call votes on the excises, item by item—by offering amendments from the floor.

Some of the excise cuts are bound to be voted, any time senators have to go on record.

But don't count yet on slicing these taxes from your price tags.

Margarine people in the House may succeed in dumping the riders in closed-door conference. If this fails, Truman would have to veto the bill. Thus he would sacrifice margarine-tax repeal to keep the excise taxes on the books. He considers the government budget situation too tight to lose this revenue.

A BIGGER AMERICAN MARKET for European goods is a project ECA is plugging now.

As Paul Hoffman sees it, other aspects of the Marshall Plan idea for putting Europe back on its feet are well in hand. The job of restarting industrial production is ahead of schedule. The tricky chore of stabilizing currencies, balancing budgets is being threshed out at Paris by the countries themselves (page 115).

But even if these steps work out as hoped, Marshall-Plan Europe will still have an unmanageable dollar deficit when ECA ends.

So ECA is moving in to plug this gap—by easing import red tape, by showing Europeans how to sell better in the U. S. market.

Tariffs are no problem in Hoffman's drive to put more European goods in American stores. It's the red tape that goes with tariffs.

Hoffman has enlisted Commerce, the Treasury, and the State Dept. to help him with his project. Here are things they are doing:

(1) Treasury is drafting legislation to clarify customs rules, make it possible for traders to know their landed costs in advance.

Example: To meet delivery dates, foreigners often have to sell their goods without knowing what valuation Customs will fix for tariff purposes.

(2) Commerce is asking Congress to set up at least three more "foreign trade zones" in the U.S.—

WASHINGTON OUTLOOK (Continued)

one to be located in the Middle West. And Sawyer is prodding the Army to vacate the space in New York's free port that it moved into during the war.

Purpose: to give Europeans wider display of their goods, make possible bigger inventories for cash-and-carry sales.

(3) Abroad, ECA-country missions have been told to act as expeditors for Europeans with special problems.

Example: The European manufacturer with an order for a product not classified in the tariff list takes his problem to the mission, which prods the State Dept. to work out an answer.

(4) Commerce is making available to Europeans all the trade information and assistance it renders to American businessmen.

(5) Finally, plans are afoot for an annual international trade fair, first in the history of the United States. Commerce has a man in Paris talking where and when. Hopes are that the first showing will be next year; Detroit and Atlantic City already are bidding.

THE MARITIME INDUSTRY—shippers and unions jointly—is setting up a “watchdog committee” to see that ECA boss Hoffman lives up to the requirement that half of Marshall Plan cargoes go in U. S. bottoms. Incidentally, the committee will have access to shipping manifests even before ECA gets them.

BEHIND THE BIG HEADLINES—the news about Berlin, the labor bill, taxes, and the like—work goes on in government bureaus and agencies.

And a lot of what happens in these administrative side streets affects business just as much as the front-page stuff.

This week we made a special tour of these places to bring you up to date on how things stand. Here's our report:

Bureau of Mines—Metallurgists are a long way toward repeating their success in turning titanium into an industrial metal. This time it's zirconium—light, strong, with high corrosion resistance. Sponge zirconium today costs \$30 a lb.; it will be half that soon.

National Security Resources Board—Its draft of on-the-shelf legislation for mobilization in a future war is gathering dust on the board's own shelf, won't even go to Congress.

Public Roads Administration—The highway-cost index dropped for the first time since 1940—2½% in the first quarter of '49.

Census Bureau—A test run for next year's big decennial population count starts next month in Anderson and Edgefield Counties, S. C. New question of import to business: “How much income do you have other than wages and salaries?” Before, it was simply: Do you have any such income?

Other 1950 tabulations will cover housing and farming.

Supreme Court—The most important business case pending—now that rigid steel conduit is out of the way (page 26)—is the “exclusive dealing” case against Standard Oil of California (BW-Jun. 12'48, p24). The issue: Is it restraint of trade for a company with 23% of the market to require its lessee dealers to handle its products exclusively?

A decision on constitutionality of the Taft-Hartley non-Communist affidavit has been put off until next fall.

Interstate Commerce Commission—Final hearings begin May 17 on the two-year-old inquiry into the rate structure of the nation's bus lines. Then there will be examiner's findings, exceptions, briefs, oral argument. A decision, fixing maximum per-mile rates, is still at least a year off.

A decision is expected sooner—maybe in a couple of months—in the Lenoir Chair Co. case (BW-June 26'48, p26). The issue is whether a seller who delivers in his own trucks and charges the customer for delivery is a common carrier under ICC regulations.

Rural Electrification Administration—It's starting to make loans for generating and transmission facilities to co-ops set up to serve groups of co-ops. The first loan was to a South Carolina group, to tie in with the big Santee-Cooper hydro-power project.

Bureau of Labor Statistics—A start is being made on an up-to-date study of the effects of production changes in any given industry on output in all other industries. A \$225,000 fund from the Air Force is paying for it.

Justice Dept.—The only major unresolved questions in working out a federal-state compromise on tidelands oil are: Which gets to hand out leases, control production? The states will get the breaks on royalties. Both sides want to complete the deal before the Supreme Court gets a chance to decide the special state's-rights claims of Texas and Louisiana.

Civil Aeronautics Administration—It's asking funds to option land for a new Washington airport—to make it easier for you to fly in. Taxi time to government bureaus: not over five minutes longer than now. Washington has already outgrown the new airport it got just a couple of years ago.



These modern cigarette-making and packaging machines turn out tens of thousands of cigarettes every minute.

How the Tobacco Industry puts satisfaction in Your every puff

A \$3,000,000,000 giant...

That's the tobacco industry's stature in terms of money paid last year... for some 380,000,000,000 cigarettes, 5,750,000,000 cigars and more than two hundred million pounds of pipe mixture and other tobacco products.

The efficiency and economy of modern machinery is keenly appreciated in the tobacco industry. Planters till the nation's tobacco land with tractors... the harvested leaf is transported by truck... automatic, permanently magnetized separators remove ferrous impurities from leaves flowing toward batteries of precision-built stemmers, driers, mixers, shredders or cutting machines and other delicate manufac-

turing equipment.

Over \$100,000,000 is invested in the industry's plants and equipment. And machines that turn out 1200 cigarettes every minute... in a steady stream that flows into packages cleverly made in advance to receive them... attest to the remarkable skill of the men who design and build this nation's tobacco machinery.

For years the technical staff of International Nickel has worked hand-in-hand with engineers, research and production men in the tobacco industry on a wide range of metal problems. To this extent Inco has contributed to the continuing improvements in performance of equipment for the manufacture

of tobacco products.

Through this and comparable experience gained in technical service throughout industry, International Nickel has accumulated a fund of useful information on the properties, treatment, fabrication and performance of engineering alloy steels, stainless steels, cast irons, brasses, bronzes, nickel silver, cupro-nickel and other alloys containing nickel. This information is yours for the asking. Write for "List A" of available publications.



THE INTERNATIONAL NICKEL COMPANY, INC. NEW YORK 5, N. Y.

*No matter
which advantage...*

YOU'LL FIND THEM ALL IN

Battery- Powered

INDUSTRIAL TRUCKS

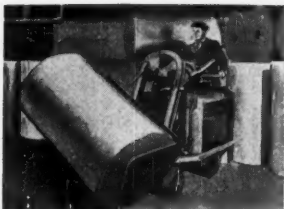
For handling costs that *stay* lowest, there's nothing to beat unit loads *and* battery-powered industrial trucks. From power-source through every detail of construction, electric trucks are specifically designed to give you unit-load handling dependably, efficiently, safely—at lowest cost per ton handled.

These lower costs are being realized in handling and distribution *throughout* whole industries. Both you and your supplier profit, for instance, when you specify unit-load packing. You save again through unit-load handling in your own operations. Then you and your consignee profit when you ship in unit loads.

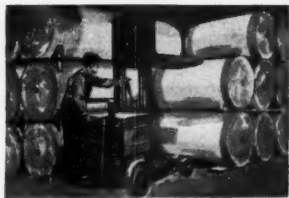
Put this new formula to work cutting costs for you—specify unit loads *to* your plant . . . *in* your plant . . . *from* your plant. And for greatest efficiency in your own industrial trucking, specify battery power.



MAXIMUM DEPENDABILITY—A metal refiner says, "Business was increasing; we had to have a method of material handling on which we could rely. We investigated . . . and switched to battery power."



LONG LIFE—LOW DEPRECIATION COST. This veteran has handled better than 1½ million tons of paper in 20 years. (Over 90% of the electric trucks sold in that period are still in constant service.)



LOW OPERATING COST—Battery-powered truck operated by a newspaper publisher, 49 hours per week, costs "a little less than \$5 a week . . . for power, battery costs, parts, grease and oil," says the owner.



SAFETY, CLEANLINESS—For the handling of inflammable raw cotton and the chemicals used in treating his finished products, a surgical dressing manufacturer finds that "electric trucks are ideal." No fire hazard, no product contamination.

THE ELECTRIC INDUSTRIAL TRUCK ASSOCIATION

29-286 FORTY-FIRST AVENUE, QUEENS PLAZA, LONG ISLAND CITY 1, N. Y.

BUSINESS WEEK

NUMBER 1026

APRIL 30, 1949



NATIONAL DAIRY president L. A. Van Bommel: "Most costs and prices in manufacturing seem to have passed their peak"



NATIONAL BISCUIT president George H. Coppers: The company, "is now getting more than its share of the business"



U. S. RUBBER chairman Herbert E. Smith: "The outlook is favorable. . . . We expect to continue a liberal dividend policy"



UNION CARBIDE president F. H. Hageron: "1949 will be a good year for us, perhaps not as good as we had hoped"



ARMSTRONG CORK president H. W. Prentis, Jr.: "It is hardly realistic to measure results against those of 1948"



DECCA RECORDS president M. R. Rackmil: "If the second quarter continues at the present pace, we'll be quite happy"

Assessing First-Quarter Profits: Still Good

But earnings this year aren't up to '48. Heavy industry going strong. Slips, and red ink, are showing in some lines.

Corporate profits in 1949 will be very good—but probably not up to last year.

That was the theme of first quarter earnings statements as they tumbled on financial editors' desks in an avalanche this week.

With the reports came the spring flood of annual stockholders' meetings. These, plus comments issued with profit statements, produced a lot of executive opinion on what's ahead (pictures).

• **Ups and Downs**—For the first quarter alone, many companies are showing gains over a year ago. In fact, the ups and downs of a representative cross sec-

tion seem to be about in balance (table, page 20). But a majority of management men obviously doubts that gains can be held for the full year.

And then there are the few whose earnings have dipped very sharply—some even into red ink. To them, the 1949 "correction" sounds like a misnomer—but they are a small minority.

In contrast, basic steel and the heavy industry groups are at or close to peacetime records.

• **Big Steel**—U. S. Steel's earnings came up to the most optimistic hopes. Big Steel's net was \$49,928,670 for the

March quarter against a revised figure of \$27,857,341 for the first three months of last year. That comes to \$5.01 a share vs. \$2.48 last year—and the directors let stockholders in on the celebration by raising the quarterly dividend from \$1.25 to \$1.50.

Republic approximately matched Big Steel's percentage gain.

• **Heavy Industry**—Profits of heavy industry generally were fine. General Electric had a modest gain, while Westinghouse was down a bit on a moderate sales dip. But sales of E. W. Bliss slid about 13%; profit was off 36%.

The chemical companies, serving the broad industrial market, continued to do very well. Union Carbide, Monsanto, Air Reduction, and Penn Salt all posted

fairly sizable gains, while Mathieson had quite a sharp one. Hercules Powder, by contrast, fell behind a year ago.

• **Autos**—Most of the big auto companies' reports (they'll be good) won't be in for a few days yet. But some of their suppliers have first-quarter results, and the showing is spotty.

Borg-Warner's earnings were about unchanged on a slight gain in sales.

However, Motor Products had a decline of pretty substantial size.

• **Building Materials**—Johns-Manville did better than most in the building-materials field. It translated a small sales gain into a 25% rise in net.

Two in the roofing and allied fields—Ruberoil and Flintkote—had fairly sharp drops in volume and even sharper declines in earnings. U.S. Gypsum's

earnings results were about unchanged. • **Railway Equipment**—Manufacturers of railway equipment still are doing well. Westinghouse Air Brake's first-quarter earnings were virtually unchanged from a year ago; American Brake Shoe went up from \$976,006 to \$1,455,722.

However, new orders aren't keeping up with production. Railroads have become economy-minded, what with traffic off. So equipment makers don't expect too much from the last half year.

As William B. Given, Jr., president of American Brake Shoe points out: "Orders are still falling off. We have many plants running four days instead of five; some are running three." Brake Shoe's unfilled orders fell from \$30.9-million at year end to \$22.2-million on Mar. 31. • **Petroleum**—Oil companies quite clearly were affected by smaller sales of heating oils (due to the mild winter in most of the country) and lower prices. Shell Union, for example, had a 30% drop in net, even though total dollar volume was down only slightly. Barnsdall, on the other hand, managed a modest gain in net on a 7% rise in sales.

Texas Co. had a good first quarter. Net came to \$28,870,000 against \$27,974,839 a year earlier. Nevertheless, W. S. S. Rodgers, chairman, warns: "We do not expect that earnings will be as large as in 1948."

• **Coal**—Many of the coal companies also suffered from the warm winter and a general decline in demand. Lehigh Coal & Navigation's first quarter drew a deficit of nearly \$150,000 compared to a profit of \$528,000 last year. At this week's annual meeting, stockholders heard that the directors might find it advisable to omit dividends.

Pittsburgh Consolidation Coal ran counter to the industry's trend: It had a 12% gain with a net of \$3,980,673.

• **Paper**—Earnings of the pulp, paper, and paperboard companies still are large; but they are down from last year's whopping levels as supply overtakes demand and operations decline.

St. Regis, Minnesota & Ontario, Chesapeake, Soundview, and Mead all had declines in net.

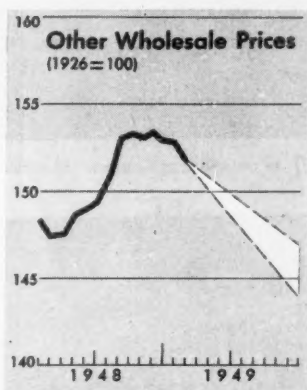
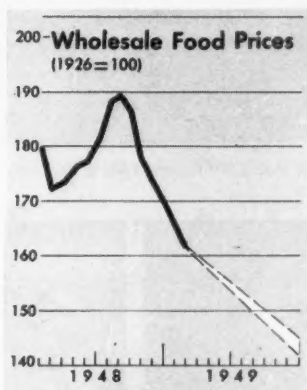
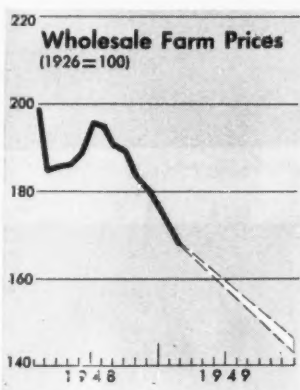
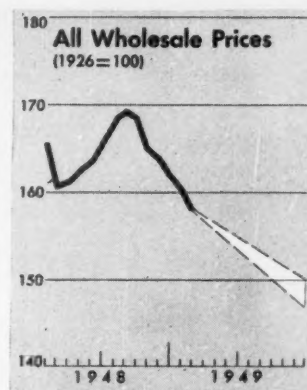
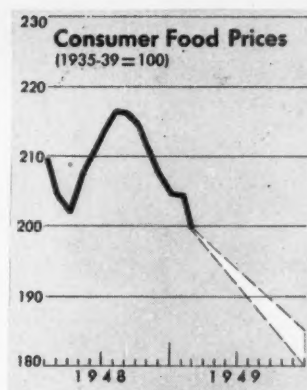
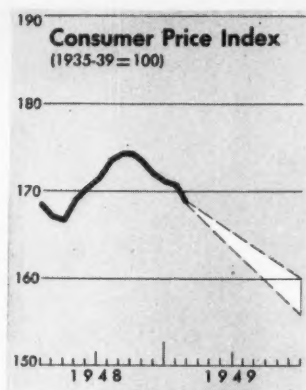
• **Stoves and Appliances**—Severe drops in demand sent some stove companies into the red—Florence and Kalamazoo are two—while Detroit-Michigan barely kept above water.

Similar market gluts hit electrical appliances. Thus Apex showed a loss, and earnings of Bendix Home Appliances all but vanished.

• **Others**—Reports of American Woolen, Pacific Mills, and Botany Mills all show traces of the slump in textiles. Underwood was down nearly 43%—in the office-equipment field, while Master Electric saw its sales of motors, and allied equipment slump 35%, with net down almost 80%.

Sampling of First-Quarter Sales and Profits

	Sales			Earnings		
	1949	1948	% Change	1949	1948	% Change
Acme Steel.....	\$14,572,476	\$14,914,592	-22.9	\$1,286,848	\$1,904,468	-34.5
Admiral Corp.....	23,513,097	12,004,168	+95.9	1,536,217	530,410	+189.6
Air Reduction.....	24,199,502	22,215,771	+8.9	1,817,430	1,378,170	+31.2
Amer. Seating.....	5,552,010	4,301,795	+29.0	359,784	265,448	+35.6
Amer. Woolen.....	40,844,000	48,918,000	-16.5	1,476,000	4,894,000	-69.9
Apex Elec. Mfg.....	3,615,510	9,786,960	-63.1	d-381,261	493,836
Barnsdall Oil.....	9,124,408	8,835,319	+3.2	3,619,055	3,385,780	+6.9
Baykus Cigars.....	6,917,781	9,345,202	-25.9	112,457	352,386	-68.2
Bendix Appliances.....	4,710,448	17,397,148	-72.9	68,710	1,658,752	-95.8
Black & Decker.....	6,431,183	6,364,844	+1.0	552,954	679,420	-18.6
Bliss (E. W.) Co.....	5,620,528	6,451,879	-12.9	403,733	633,050	-36.3
Borg-Warner.....	78,706,040	77,100,727	+2.2	6,692,393	6,762,202	-0.7
Botany Mills.....	10,983,679	12,588,682	-12.7	352,066	899,489	-60.9
Brunswick-Balke.....	4,892,206	5,305,711	-9.7	d-53,732	62,406
Caterpillar Tractor.....	65,055,795	56,953,945	+14.3	4,796,621	2,925,326	+64.0
Centaine Corp.....	28,470,996	34,051,673	-16.4	1,974,313	2,112,830	-6.6
Detroit-Mich. Stove.....	2,234,773	6,054,264	-63.1	55,204	648,344	-91.5
Doehler-Jarvis.....	19,368,061	17,950,292	+8.1	1,709,614	2,183,153	-21.7
Ferro Enamel.....	6,309,387	7,744,595	-18.5	336,695	377,520	-10.8
Flintkote.....	12,837,288	17,541,370	-26.8	725,871	1,560,708	-53.5
Florence Stove.....	4,519,126	6,502,284	-30.5	d-33,743	543,386
Gen'l Aniline.....	18,900,000	20,773,600	-9.0	1,600,000	1,542,900	+3.4
Gen'l Electric.....	411,615,528	365,957,990	+12.5	26,702,978	25,389,149	+5.1
Gen'l Port. Cement.....	4,912,600	4,001,500	+22.8	1,143,900	814,900	+40.4
Hercules Powder.....	30,168,730	33,984,525	-11.2	2,501,690	2,975,181	-15.9
Husmann Refrigerator.....	3,271,885	3,490,790	-6.3	265,346	324,226	-18.2
Johns-Manville.....	38,022,710	37,525,400	+1.4	2,883,451	2,307,052	+25.0
Koppers Co.....	49,126,142	42,452,053	+15.7	1,813,131	1,577,165	+15.0
Liggett & Myers.....	135,422,000	127,069,000	+5.0	6,377,000	5,682,000	+12.1
Master Electric.....	2,579,235	3,944,563	-34.6	139,945	673,679	-79.2
Mead Corp.....	18,946,752	19,617,223	-3.4	835,345	1,012,499	-17.5
Minn. & Ont. Paper.....	10,457,088	12,585,895	-16.9	881,054	1,500,675	-41.3
Monsanto Chemical.....	40,893,943	38,473,744	+6.3	4,461,608	3,805,588	+17.3
Mullins Mfg.....	7,919,755	11,508,235	-31.2	748,051	1,531,683	-51.1
Nat'l Biscuit.....	75,646,245	72,458,652	+4.4	5,299,533	4,751,494	+11.6
Pacific Mills.....	23,995,000	29,796,000	-19.5	1,866,000	2,750,000	-32.1
Pitts. Plate Glass.....	70,735,310	66,713,935	+6.0	7,813,756	6,667,895	+17.2
Republic Steel.....	215,514,697	182,324,128	+18.2	15,298,628	9,132,980	+67.5
Robertshaw-Fulton.....	5,845,719	8,494,944	-31.2	436,279	765,533	-43.0
Ruberoil Co.....	8,920,931	13,993,505	-36.3	461,980	1,307,498	-64.7
Rheem Mfg.....	11,007,000	14,090,000	-21.9	563,500	730,737	-22.9
St. Regis Paper.....	34,903,000	40,394,000	-13.6	2,200,000	4,494,193	-51.0
Sharp & Dohme.....	10,175,534	8,986,516	+13.2	1,370,381	1,066,940	+28.5
Shell Union Oil.....	205,204,046	207,774,110	-1.2	28,832,655	41,848,250	-30.1
Struthers Wells.....	4,320,000	3,502,000	+23.4	323,841	237,909	+36.1
Sunray Inc.....	14,407,623	14,477,871	-0.5	2,755,427	4,129,840	-33.3
Sylvania Electric.....	27,108,895	24,547,529	+10.4	1,176,815	1,162,737	+1.2
Texas Gulf Sulphur.....	14,954,696	14,303,976	+4.6	6,332,056	5,562,019	+13.8
Union Carbide.....	157,037,519	150,154,423	+4.6	24,529,419	23,019,722	+6.5
U. S. Gypsum.....	31,718,102	33,100,622	-4.2	5,311,542	5,332,029	-0.4
U. S. Steel.....	664,892,529	556,002,239	+19.6	49,928,670	27,857,341	+78.9
Westinghouse Elec.....	226,658,722	236,071,263	-4.0	10,866,921	13,135,789	-17.3



The Price Future as Government Men See It

How much lower will prices be by the end of the year?

• **Basic**—Many business decisions that are being made today depend in large measure on businessmen's best judgment as to what prices are going to do in the next month, or the next quarter, or the next year. To help businessmen form those judgments, BUSINESS WEEK went to chief price economists in the Bureau of Labor Statistics, the Bureau of Agricultural Economics, the Commerce Dept., and the Council of Economic Advisers. We asked them: What is your best estimate of price levels next Dec. 31?

The consensus: roughly 5% to 7% below current levels.

• **Related Factors**—It's impossible, of course, to think of price movements in a vacuum. A great many other factors must be considered. Chief among these is the general level of business activity.

So all of the estimates assume that business will decline—but not sharply; in other words, that the country isn't

heading into a real depression or even a severe recession. That, incidentally, is the assumption on which all government agencies are operating today. In concrete terms, they expect no more than a 9 or 10 point drop (5%) in the Federal Reserve Board's index of industrial production.

• **Debate?**—If business does slump more than that, the experts think price drops would be disproportionately large. For instance, with a 5% drop in business, they expect the cost of living to fall 5% to 7%. But on the basis of a 10% slide in business, the estimates of the c.-of-l. drop run all the way up to 45%.

Here are the estimates on specific price indexes (charts, above), assuming a 5% decline in business:

Consumer Price Index (better known as the cost-of-living index). A drop of from 5% to 7% by the year's end. There will be a slight rise through April or May (page 108); then a slight decline, which will get steeper in the autumn.

Consumer Food Prices (the food

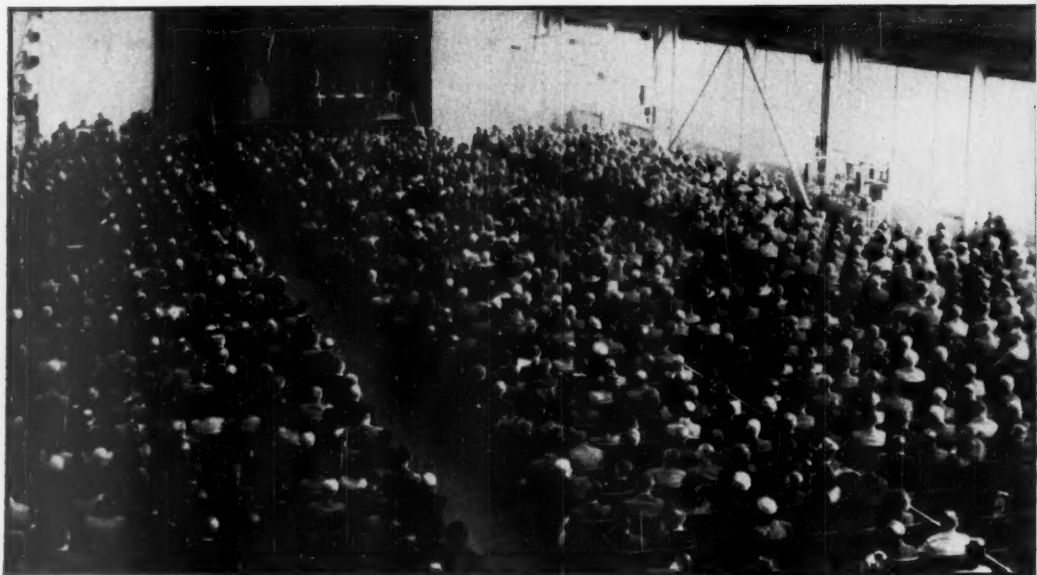
components of the cost-of-living index). A drop of from 7% to 10%. Again, a slight rise is expected in the next month or two.

All Wholesale Prices. A drop of from 5% to 7%. This is the index about which the experts are least sure—because it contains so many factors.

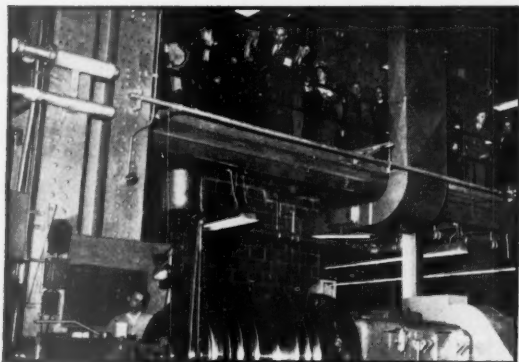
Wholesale Farm Prices. A drop of no more than 8%. Reason: The shake-down last February brought most quotations close to support levels.

Wholesale Food Prices. These may drop by as much as 10%. The support-price factor is dominant here, too. But the drop may be greater than for farm prices, because the full effect of the February slump may not yet have been felt.

Other Wholesale Prices (all commodities except farm products and foods). These will drift down by only 3% to 5%. Of course, a sudden letup in demand for steel could push steel and coal prices—and the index—way down. But the forecasters don't see any such sudden letup.



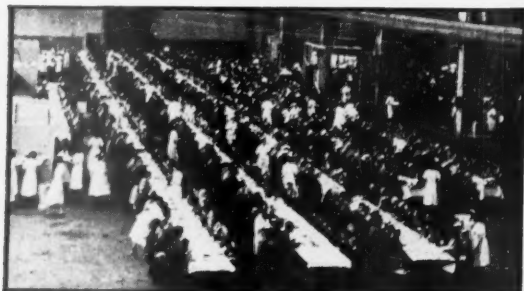
1 In one corner of their new \$30-million plant, some 2,500 General Electric stockholders listen to Charles E. Wilson



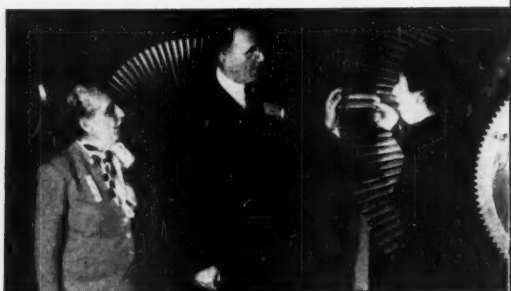
3 Later, on guided tours, they see the sprawling 20-acre plant at first hand, both from the balconies and . . .



4 From the floor, where steam turbines are already being turned out in small quantities



5 Some 130 waitresses serve the guests a cold-cut-and-potato-salad luncheon in another part of the plant



6 Miss Jessie Adler (left), who came from Florida, and Mrs. Jerome W. Stafford, from California, talk with Wilson



2 Some stockholders show keen interest, others doze peacefully or try to think up tough questions

Stockholders Swarm to G.E. Meeting

Schenectady plant is flooded with guests as owners come to find out what company is doing with their money.

At 11 A. M. one day last week, Board Chairman Philip D. Reed banged his gavel for order. Before him—in one corner of the company's new \$30-million steam-turbine plant in Schenectady, N. Y.—nearly 2,500 General Electric Co. stockholders gradually quieted down.

• **"Intensely Happy"**—"I just can't tell you," said Reed, "how intensely happy we are that so many of you have answered our invitation by coming. None of us knows of any company in the U. S. which has ever had so many stockholders present."

There was no doubt that G.E. was happy at the turnout. But it was also as nervous as a bride who is having all her in-laws for dinner for the first time. Past experience had taught G.E. only too well that even a handful of stockholders can ask some pretty rough questions.

• **First Question**—Reed had scarcely finished his welcome when it seemed about to happen. A grey-haired woman in the second row raised her hand. She stepped to one of the three microphones spotted around the area. Identified herself as Miss Jessie Adler of Miami, Fla.

"I have just been wondering if you have ever considered having a woman on the board?" she said.

That one was easy:

"Oh, yes, we already have several."

"More than 50%?"

"No, no. Not more than 50%."

"But I understand that more than 70% of the stockholders in U. S. industry are women."

"Is that so?"

"Yes. And besides, you sell most of your consumer goods to women, too."

• **Other Items**—Miss Adler was then gently reminded that G.E. made things other than consumer goods. Reed pointed out that few women had frequent occasion to buy a diesel locomotive or a steam-generating plant.

Miss Adler sat down.

• **Reactions**—Other stockholders reacted in different ways during President Charles E. Wilson's long address. Some listened intently to every word. Others divided their attention between G.E.'s finances and paper dolls which they tried to make out of their programs. Others fell asleep, apparently confident that they had nothing to worry about.

The report was one to delight the heart of any stockholder. Said Wilson: G.E. is in healthier financial shape than ever. Its net income had jumped from \$95.2-million in 1947 to \$123.8-million last year. From its earnings in the first three months of 1949, stockholders would get dividends of 50¢ a share—

10¢ more than they got from the same period last year.

• **Sudden Silence**—Right in the middle of Wilson's speech there was a sudden silence—the public address system had gone dead just for a few seconds. This visibly shocked some stockholders who thought that the sound system was a G.E. product. (It wasn't, but no one told them so.)

At another point in the speech, Wilson heard a scrabbling over his head. He looked up as though he half expected the huge traveling crane which spanned the width of the area over the platform to collapse. Instead, he saw a photographer crawling precariously out on it.

A press agent blanched. Quickly he sought out the other photographers. "Don't go up on that crane!" he ordered in a husky whisper. "Wilson looked up. He'll be mad as hell because that guy went up there." (He wasn't.)

• **Write-Down?**—Then came a question from the floor. Wilson had said that G.E. had lowered prices on new production, but not on stuff already made. A man walked up to the microphone.

"Are you having to take any write-down on inventories because of lowering prices?"

"Minor. Very minor. Next question."

• **Refrigerator**—It came from a woman. "I've had a G.E. refrigerator for 19 years and never had a service call. Now I think the sales department should

follow the course of my refrigerator and see how long it goes without a call."

This was supposed to be complimentary, but G.E. didn't seem to take it that way. All it had to say was, "That's very interesting."

• **More, Please**—Next came something a little sharper, also from a woman: "In view of the tremendous profits you are making, it seems to me that less money should go into expansion and more should be given to the stockholders."

G.E., trying to ignore the \$30-million building it was sitting in at the moment, explained that it would love to give more money to its stockholders. But one trouble was that there was a debt to be retired—and it had retired a big chunk of it. Besides, more production would mean more money in the long run for the company's owners.

• **Feeding the 2,000**—G.E. breathed a sigh of relief when the meeting finally adjourned. Certainly the officials had been subjected to no third degree.

So the company executives were in jovial moods when they sat down with their 2,000 guests to eat cold cuts, potato salad, tossed salad, rolls, coffee, and hard-as-a-rock ice cream. Wilson, sitting across the table and about 20 ft. away, bantered with G.E. Secretary William W. Trench about who was responsible for getting the pretty waitresses.

• **Preparations**—Feeding a meal to such a throng was a major undertaking. But G.E. did it as smoothly as if it were an old hand at running church suppers.

G.E. had scoured the countryside for chairs, finally rounded up the 4,000 it needed for the meeting and luncheon. Somehow it managed to line up 2,000 ft. of table space.

• **The Biggest Question**—Even when it was all over, nobody knew why so many people had come (usually there are only 300 or 400 at stockholders' meetings). Some company officials said, as if they didn't really believe it, that maybe it was the unusual props. The invitations had told the stockholders that they would meet in the new 20-acre turbine plant, that they would eat a free lunch in another part of it. In addition, they would see the plant and the new G.E. Knolls Research Laboratory nearby.

Others argued that this is hardly enough reason for so many people to come from 40 states and Canada. (The next day, Westinghouse Corp. also held its meeting in a factory. The number of stockholders present was about the same as usual.)

• **Success**—Whatever their reasons for coming, the stockholders obviously all had a wonderful time. They felt that the finesse with which G.E. played host simply confirmed its great strength as a moneymaker for them. One woman, as she left the factory, summed up the general feeling. She said: "I'm G.E. through and through."

Men's Suits Off

Sales drop 10% from last year, but are still ahead of pre-war. Prices probably won't fall much—except in distress.

The men's clothing industry this week looked at its waistline with a good deal of concern.

There is no longer any doubt that the huge girth it put on right after the war is disappearing. What has the industry jittery is that it doesn't yet know just how much it is going to have to take in its waist.

• **Prices and Sales**—The opening of some fall lines in New York last week showed price cuts ranging up to 6%. Nearly everybody in the business agrees that sales in most men's clothing lines will be off from 5% to 10% this year over last. (That would still make 1949 a lush year compared to prewar.) But some lines are sure to drop a lot farther.

Hardest hit so far seem to be medium-priced woollens. One manufacturer says that retailers have reported a 20% to 30% sales drop in spring woollens, mostly in the \$40 to \$50 class. Higher-priced suits are showing up much better, but are still off from last year.

• **Cost Factor**—Despite this glum outlook, most of the industry insists that it can't cut prices and keep quality at its present level. The argument is that costs are so high that big price cuts just aren't possible—unless the public stops buying altogether and selling gets into the distress category. About all the customers seem to want so far is to be able to buy a suit for around \$10 less than they are paying now. And manufacturers say that that couldn't be done even if a 10% wage cut were in the cards—which it isn't.

Here's what the trade guesses will happen: Lines which the sales slump hasn't yet hit seriously will continue with the same prices and quality. Really hard-hit lines will come out at lower prices—and with cheaper materials. Prices of poorer-quality goods will be cut from 7% to 10%.

• **The Outlook**—Here's how some of the major men's clothing centers see the picture for 1949:

Rochester, N. Y. Factories are still making spring and summer goods, but very sketchily. Right now factories are practically shut down. After May 1 they will start rolling—but very slowly—on fall lines. This extreme caution is reflected in the fact that some factories making lower-quality goods haven't even set fall prices yet, an almost unique situation. Outlook for makers of quality goods looks bright for both spring and fall.

Baltimore. Mills here are among the

most optimistic. The trade admits a slight general slump, but says it's too early to tell for sure about what it means. For example, one maker of summer suits says that trade will be high this year because that market never has been saturated. He thinks the general "blues" may easily be due to losses by the "fringe" operators who went into men's clothing to make a fast dollar after the war and are now folding.

Chicago. The mail order houses, which have reduced prices to some extent, say that business is off from 10% to 12%.

Sears, Roebuck & Co. expects that by the next week or two it will have had unit sales equal to those during the same period last year. But dollar sales will be lower because of lower prices. The big demand is for a good \$40 or \$45 suit, which Sears says it has now. Anything higher priced than that is slow. Sears rayon summer suits have made a big dent in the tropical worsted market. It now has nonfade rayons that sell for \$30.

Aldens expects to wind up its early spring season with men's wear running 10% to 15% under last year's sales rate. Prices on summer wear will be lower—as much as 18% on men's wool slacks.

Rhode Island. The spring season washed out completely. On top of that, worsted manufacturers are now looking at their lean order books with one eye and the calendar with the other. The manufacturing season is getting on, yet the bulk of men's worsted yardage for fall still has to be placed. Millmen say that yardage inventories are heavy all along the line, from the mills right through to the cutters' hands.

Price doesn't seem to be the answer. One big mill cut prices after the opening fell flat. But the bait hardly got a nibble. Neither did new styling in fancy goods. So everybody's watching spring retail sales of suits to get a clew on retailer reorders. But the mills feel that consumer buying will have to be really good if it is going to speed up the use of cloth by cutters.

New Orleans. The South is the most optimistic area of all in the men's clothing field. It is pinning its hopes on rayon suits, which its factories will turn out in large numbers this year.

Rayon suits for men became popular after the war. Thanks to the shortage of wool, men who had never considered rayon had to give it a try. According to southern mills, they liked it and the demand has grown steadily. As a result, both Haspel Bros. and Famous-Sternberg will put about 70% of their summer-suit production into rayons.

One sour note: A recent Dept. of Agriculture poll showed that 39% of the men who wear summer suits prefer wool, 35% prefer mixtures, 8% prefer cotton, only 7% prefer rayon.



This Wheel Has a New Twist to It

John F. Kopczynski (right), 31, of North Tonawanda, N. Y., believes he has come up with something new in the way of wheels. It's this elliptical job, which he says will give better traction in mud, snow, and soft ground. When the wheel was demonstrated last week it reminded spectators of trick cars seen in circuses. But this one is no trick. Kopczynski has overcome the

bumpety-bump by mounting each pair of wheels on a specially designed rocker arm. The ends of the arm go up and down as the wheels turn; but the center of the arm, where the axle is fastened, rides level. As the car moves forward it seems to have a heel-and-toe stride. Kopczynski says he has spent \$10,000 developing his idea and has been working on it 10 years.

Competition Returns in Steel

The sellers' market is over. Base prices won't be cut, but extras probably will. Some mills are again absorbing freight to meet competition. Regional variations show up in supply.

Sales managers for three top steel companies in Pittsburgh were absent from their offices on the same day last week. All of them were out contacting customers.

It was a sign of the times. The steel market is headed into a new phase of aggressive selling and, probably, lower competitive prices.

Competition is everywhere. Rivalry is keen between mills; mills are battling warehouses; warehouses are reaching for each other's business.

• **No Base-Price Cut**—Steel men generally pooh-poo the idea of a reduction in base prices for steel this year. But all of them are toying with the idea of making price concessions where necessary to meet competition. In fact, most salesmen and sales managers are itching to do so.

However, there are no signs of a full-scale break in prices anytime soon. Nor does there seem to be justification for an industry-wide cut now. This week's operating rate of 97.5% of capacity indicates that demand is still way above normal. And a check of representative companies finds a fairly common opinion that the rate this year should not go below the high 80's. The only question seems to be what's going to happen in the third quarter.

• **Regional Differences**—Competition varies in degree from one market area to another. Competitive pressure is growing rather severe on the Pacific Coast. There is enough inbound movement of Eastern and Midwestern steel to make Western producers think hard about competitive prices and competitive service.

In Detroit, the demand for sheets is still intense, but supply of other items is pretty much in line with demand.

Chicago is not feeling much competition yet, and steel men there say it won't show as soon as it will in other places.

• **No More Gray Market**—Practically all premium steel prices have been snuffed out since the first of the year. The gray market, where steel sold as high as ten times mill quotations, has disappeared completely.

Costly conversion deals have lost their appeal for many buyers; auto companies are about the only ones nowadays who still arrange to buy semifinished steel from one source and have it rolled somewhere else.

Steel companies that priced part or all of their products above the going quotations have trimmed down to base prices.

• **Freight Absorption**—Now a trend has started that is giving a few customers steel at below-mill quotations. This is being done by producers abandoning strict f.o.b.-mill pricing. They are absorbing freight charges to meet competitors' prices when necessary.

So far the Kaiser Co. is the only one to announce publicly its intention to absorb freight. But freight absorption by some other mills has been reported. For that matter, a few small mills never did switch from the basing-point pricing system. Some wire mills, mostly in Southern Illinois, are still selling at Chicago prices.

• **Hesitation**—The bulk of the steel industry is still holding aloof from freight absorption. Reason: The large companies feel they cannot absorb freight as long as the present law and court interpretations stand. They had that opinion strengthened this week when the Supreme Court ruled again, in the rigid-steel-conduit case, that the basing-point system of pricing is banned (page 26).

U.S. Steel Corp. is ready to begin freight absorption to meet competition whenever the law is changed or Congress passes the moratorium bill giving all kinds of pricing systems free play for one year. As things stand, though, the corporation feels its hands are tied by the cement-case decision last year. If they are untied by congressional action, Big Steel will move quickly, and its action undoubtedly will be followed by all other steel companies.

• **Extras**—The rest of the industry probably will also play follow-the-leader on revisions of extra charges. These are the added charges, over and above the base price, to cover special physical and chemical specifications. U.S. Steel announced last week it would soon publish revisions; they will result in lower charges for some extras and higher charges for others.

Even though the revisions may not have a total effect of price reductions,

steel buyers know that this is a vulnerable area for price trimming. They will expect certain extra charges to be dropped by mills that aren't willing to whack anything off the base price.

• **Warehouse Problems**—Some big warehouses are still complaining about inadequate and unbalanced stocks. However, the shortages are limited chiefly to sheets, bars and plates, and possibly wide-flanged beams. Warehouses normally get about 15% of mill output, and mills have been holding them to that level. So, in the postwar period of heavy demand, warehouses have been short just like everyone else. Now the warehouses are able to meet almost all demands by customers. But they are unable, generally, to build as complete an inventory as they had prewar. Probably 2-million to 3-million tons of steel are still needed to reach the prewar level.

Some small warehouses, however, are

singing a different tune. They are looking hard for enough business to keep them going. The war-born organizations particularly are finding the going rough. Fully a third of those newcomers are expected to fall by the wayside before the end of 1949. They are cutting prices now to move some overpriced steels.

• **Cancellations**—The steel marketing picture is complicated further by cancellations mills and warehouses are getting from customers no longer urgently in need of steel. Cancellations are especially heavy on high-quality steel. These customers are re-ordering instead, ordinary grades that probably weren't available when initial orders were placed.

Some warehouses are also caught with a big supply of seconds that would have moved easily six months or a year ago. But the off-quality steel can't be sold at a profit today, in the face of a better supply of prime steel.

Weapon Center

Aviation armament is behind needs of supersonic planes. Florida test center will speed development of better weapons.

Air forces in peacetime always tend to get interested in airplanes as flying machines, to forget that they are weapons. That happened to the U.S. Air Force before the last war, and since the war it has happened again. The aviators have been more interested in exploring exciting things like jet propulsion and supersonic speeds than in developing their planes as fighting machines.

In consequence, progress in airplane armament is at least a year behind progress in airplanes. The Air Force has now begun to realize this.

• **Test Center**—First fruit of this realization is a new air armament test center. AF will start setting up the center within a few weeks at Elgin Field, Florida. At first, AF will use funds it has on hand now, but over the next few years it will need several million dollars annually for additional buildings and equipment.

The new center is not intended to take the place of the development work now done by private munitions manufacturers—who now do about 90% of the weapons development. In fact they will get some use of the test center in their work. AF work at the center will be aimed at testing new weapons and at developing new approaches to the design of guns, bombs, missiles, rockets, radioactive and biological weapons for air use.

AF people figure that their contractors can profit by this sort of stimulation. For airplane development, they can rely on an eager industry whose lifeblood is military business. Weapon development is often done with the left hand by firms whose real interest is in commercial business.

• **New Needs**—The new high-speed airplane designs have raised a slew of armament problems that haven't even been tackled yet. The flight performance of the new bombers, for instance, has been tested. But no one knows how they'll perform as bombers—what will happen when you drop a bomb from 40,000 ft. at, say, 400 m.p.h. or more. The technicians suspect that the fat, rather roughly made bombs of World War II will wobble hopelessly and miss the target. They think they'll have to work out thin, finely machined—and expensive—projectiles to do the job.

Bomb aiming, too, gets more complicated. Anything simple enough to be described as a "bomb sight" is now completely outdated. Thinking runs to

Final Blow to Basing Points

That's what this week's decision of Supreme Court amounts to, but it still leaves other delivered-pricing questions in a muddle. Court upholds FTC: There can be "conspiracy without a conspiracy."

Even if the government can't prove a conspiracy in pricing, businesses can still be guilty of "concerted action" to restrain competition.

That became the law of the land this week—when the U.S. Supreme Court, by a 4-to-4 vote, upheld the lower court and the Federal Trade Commission in the rigid-steel-conduit case. The decision killed any lingering hopes that the high court would clear up the tangled delivered-price situation. It dealt a final legal blow to basing-point pricing—unless Congress saw fit to pass a new law.

• **What Will Congress Do?**—Two probable results of the decision:

(1) New steam behind pending House and Senate bills for a moratorium on new delivered-pricing cases in which conspiracy is not a factor.

(2) New steam behind demands that Congress clarify the delivered-pricing question through specific legislation.

• **Conspiracy**—The conduit case was first decided by the Seventh Circuit Court of Appeals, in Chicago, last May—just two weeks after the Supreme Court's famous Cement Institute decision (BW—Jun. 12 '48, p. 74).

The conduit case involved two counts; the second is the important one. In it, FTC said: The fact that each of the conduit manufacturers used the same basing-point system, "with the knowledge that each did likewise," was in itself evidence of violation of the law—even if no legal conspiracy could be proved.

The cement-case decision outlawed concerted action to maintain a basing-point system. The conduit-case decision greatly enlarges the definition of "concerted action."

• **Letdown**—The Supreme Court's action came as a terrific letdown to both industry and government. Reason: By long precedent, the justices hand down no written opinions in even-split decisions. Therefore, there's no way of following the logic of each individual justice.

Businessmen have several reasons to feel unhappy:

(1) FTC's "conspiracy-without-a-conspiracy" ruling stands.

(2) With the Democrats in power, the prospects for a delivered-pricing amendment to the present antitrust laws are rather dim.

(3) Any future Supreme Court clarification of the issue is a long way off. The commission has three delivered-pricing cases in the works: Chain Institute, National Lead Co., and American Iron & Steel Institute. But it will probably be at least a couple of years before anyone of these comes up for Supreme Court action; so far, not one of them has even reached the stage of final FTC action.

• **Disqualified**—The Supreme Court split because Justice Jackson didn't participate in the decision. He had a hand in both the Cement Institute and rigid-steel-conduit cases back when he was with the Justice Dept.; so he disqualified himself.

ENOUGH STEEL?

The Time to Watch Inventories May Be Now

Informed opinion holds that the time may be near when industry must again show caution in the control of steel inventories. In fact, for some types of steel that time has already arrived.

It's all too easy for this important fact to escape notice until too late. Because of abnormal demand the problem of excess steel inventories has been no problem at all for several years. Now there are signs of a change. The situation is still uncertain and some steels remain critical. But when the turn comes, even today's "normal" inventories may loom large.

As warehouse stocks improve, you can safely extend a conservative buying policy over an increasing variety of steel requirements. Warehouse stocks serve as your steel inventory reserve, allowing you

to keep your own inventory at a practical working level. Thus you avoid the continued tie up of capital and minimize the risk of an inventory loss.

The Ryerson organization is particularly well equipped to work with you in keeping your inventory streamlined. Each of thirteen Ryerson plants has large stocks of carbon, alloy, and stainless steels in spite of some unbalance from a size standpoint. Each is served by high speed cutting and handling facilities—and staffed by experienced steel men.

So don't let changes in product design or market conditions catch you with your inventory too high.

Steel overstocks can easily become an expensive luxury. We suggest you watch your inventories and keep in touch with us for your current requirements.



Joseph T. Ryerson & Son, Inc. Plants at: New York, Boston, Philadelphia, Detroit, Cincinnati, Cleveland, Pittsburgh, Buffalo, Chicago, Milwaukee, St. Louis, Los Angeles, San Francisco.

RYERSON STEEL

WHAT'S YOUR ANSWER

to this New York State business quiz?

1. One tip-off to the wealth of a market is the amount of life insurance in force per person. How does N. Y. State rank? 1st; 5th; 10th?
2. There is a record total of 565,000 business firms now operating in N. Y. State. How many represent the net increase since V-J Day: 4,000; 14,000; 140,000?
3. N. Y. State has 27% of the nation's banking resources. But how many state-wide banking organizations: 50; 25; 1?

1. 1st. 2. 140,000. 3. Only one...and it's Marine Midland — a banking organization that can well serve your business. State-wide coverage means efficiency. Your checks and drafts are quickly collected. You save time and money. And at your fingertips you have the suggestions of bankers who know local business conditions first hand. It's profitable to do business in New York State...and to bank with Marine Midland Trust Company of New York.

Marine Midland Banks serve...

Buffalo
New York City

Adams
Albion
Alexandria Bay
Antwerp
Attica
Avon
Batavia
Binghamton
Copenhagen
Corinth
Cortland
Depew
East Aurora
East Rochester
Elmira
Elmira Heights
Endicott
Evans Mills
Fulton
Holley
Horseheads

Jamestown
Johnson City
Lackawanna
Lockport
Malone
Medina
Middleport
Niagara Falls
North Tonawanda
Nyack
Oswego
Palmyra
Phoenix
Rochester
Rochester
Snyder
Sodus
Tonawanda
Troy
Watertown
Watkins Glen
Webster
Westfield
Williamsville
Wilson

The

**MARINE MIDLAND
TRUST COMPANY**
of New York

120 BROADWAY

Member Federal Deposit Insurance Corporation

a radar-computer combination which would detect the target, keep track of the exact position of the airplane, fly the plane during the bombing run, and release the bomb, all automatically.

• **Gunnery**—The same or a similar mechanism would also have to aim .50-caliber and 20-mm. guns of the airplane. Here the objective is a search radar which would detect the presence of other aircraft, identify them as enemy, lock on and track them automatically, and send data to a computer which would automatically aim the guns to bring down the plane.

High speed, however, involves the guns themselves in various difficulties. World War II guns were aircooled; at sonic and supersonic velocities the friction of the moving air would heat the guns instead of cooling them. So some sort of refrigerating apparatus may be necessary.

Firing forward from a supersonic airplane may involve difficulties when the bullets pass through the shockwave ahead of the plane. And firing to the rear and sides, as a bomber must be able to do, poses tremendous difficulties when the plane is moving nearly as fast as the muzzle velocity of the gun. Firing to the rear is practically impossible except at a following target, when the

target plane can be expected to fly into the bullet.

• **Gun Dimensions**—One answer to this last problem is higher muzzle velocities. However, that calls for long, protruding gun barrels. These interfere with the aerodynamics of the airplane—and in any case the iron-hard supersonic slipstream would probably bend long barrels excessively.

Simply finding places to put guns in a knife-winged supersonic plane is something of a problem in itself. Even worse is the problem of finding space for ammunition belts and discarded shell cases. Some thought is being given to use of a liquid propellant explosive, which could be injected like fuel into a diesel engine.

• **Administration**—Establishment of the Elgin Field test center marks the solution of some of the administrative problems involved in tackling questions like these. Plane development is the responsibility of AF, weapons of Army Ordnance; in the past there has been some dispute. Beginning July 1, a new arrangement will go into effect, under which AF—which has decided it can't take on weapons work itself—will put up the money and Ordnance will do the work; AF will provide the testing ground.

BUSINESS BRIEFS

Beardsley Ruml is resigning as R. H. Macy's board chairman to "reduce his responsibilities" so he can carry on with his outside activities. He will remain a director.

Despite rumors, du Pont has no plans to pass out its huge holdings of General Motors common to its stockholders—not soon anyway.

Koppers Co. will buy Freyn Engineering Co., Chicago, along with its subsidiary, Open Hearth Combustion Co., through an exchange of stock. Freyn designs and builds blast and open-hearth furnaces, and engineers mills, power stations, and other steel-plant facilities.

Floods are unlikely this spring in the river basins of the Midwest and Far West. And, say the Weather Bureau and other government agencies, the prospects for the water supply during the coming year are better than normal.

Refiners are offering 25¢ less a bbl. for heavy crude oil in some Texas fields. That's the first cut in Texas crude since prewar.

Paul V. Shields now has full control at

Curtis-Wright. This week he became (1) board chairman and (2) chief executive officer in addition to his job as chairman of the executive committee. C.-W. must still appoint someone to replace president William C. Jordan, who has resigned.

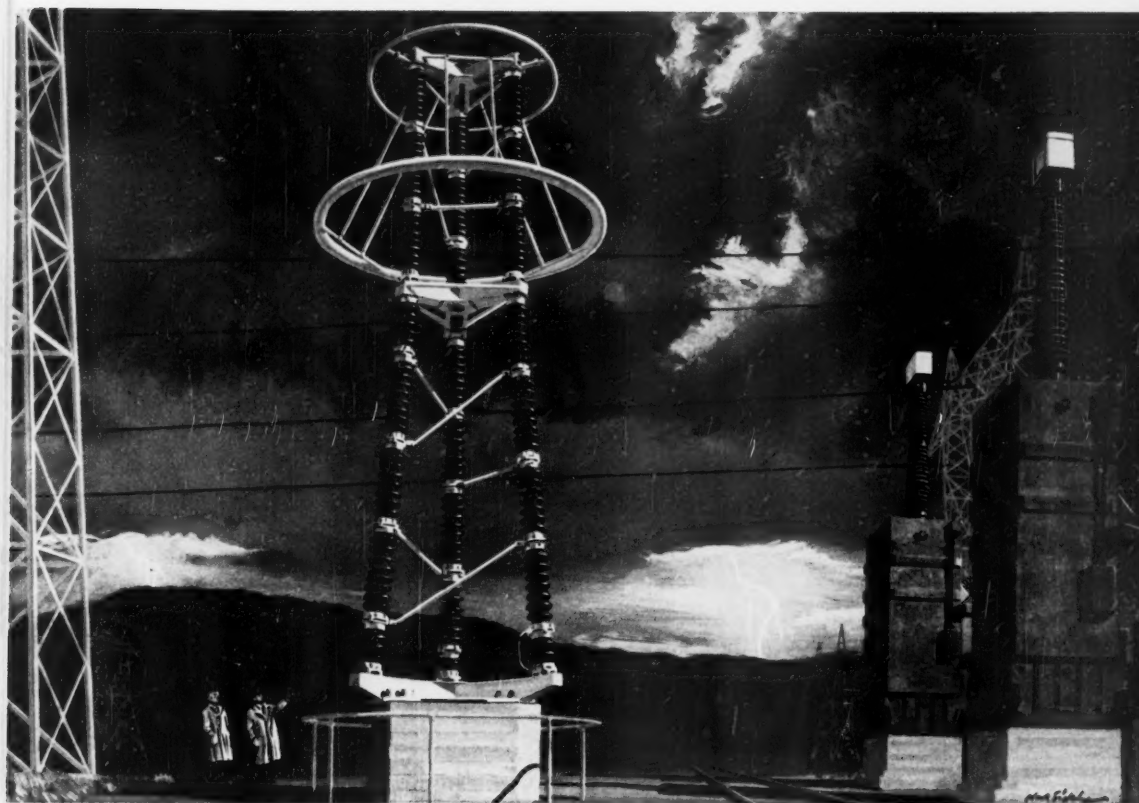
Ford has invested more on postwar plant facilities than it has made in profits. "The difference," said Henry Ford II this week in a New York speech, "is coming out of past profits."

Strike at Bendix Products in South Bend has thrown out of work (1) 12,000 Nash workers at Kenosha and Milwaukee, and (2) 7,000 Kaiser-Frazer workers at Willow Run. Shortages of brakes may close down still other auto plants.

Nevada's new law making the state an "inland free port" will let eastern companies take advantage of carlot freight rates to tap Pacific Coast markets. Goods shipped into the state can be warehoused a year without incurring personal-property taxes.

Radioactive isotopes are blamed for ruining 20,000 ft. of a new Sir Alexander Korda film and other footage shipped via rail in Britain. The railways were also carrying isotopes in what were thought (by the Harwell Atomic Research Center) to be protective containers.

YOU CAN BE SURE..IF IT'S Westinghouse



HALF-MILLION VOLT "TRAFFIC COP"

Power engineers, with the cooperation of Westinghouse, are now testing out a great new "electrical superhighway". Along it race 500,000 volts—almost *twice* the voltage carried by any transmission line today.

It may well change the whole geography of power in the U.S.A., by developing ways to transmit large amounts of power more efficiently and economically than ever before.

You have to be *sure* when you deal with

big power at 500,000 volts. That's why Westinghouse was called on to design and build not only this half-million volt lightning arrester, but the world's highest-voltage power transformers and other vital equipment.

This kind of confidence is the reason your local power company depends on Westinghouse, too, for much of the equipment that supplies and protects power for your home or factory.



MAKER OF THE BROADEST LINE OF ELECTRICAL EQUIPMENT



BEAMED ON SALES! Soundly engineered for easy installation and fine, trouble-free reception, these indoor- and outdoor-type antennas are fast sellers in the big, rich television market. Both the dipole and reflector elements are of strong, non-sagging, non-swaying Bundy Tubing.

Antennas that bring in pictures...and profits



Television receivers need antennas and the antennas are better when made of tubing.

Which tubing?

The manufacturers of these indoor- and outdoor-type antennas found the perfect answer in double-walled Bundyweld® Tubing. Used for the dipole and reflector elements, Bundy is easily fabricated and inexpensive . . . helps bring in profits as well as pictures.

If you aren't familiar with this miracle tubing of industry, you ought to be, regardless of what you manufacture. For almost everyday a new design, structural or functional appli-

cation of Bundy turns up somewhere to lower costs or to improve a product . . . often in cases where the design or production problem doesn't seem to call for a tubing at all! You may be the one to profit tomorrow.

The only tubing that's double-walled from a single strip, Bundy is made to amazingly close tolerances. It's extra-strong, yet thinner walled, ductile; easier to bend and fabricate . . . and it's available in steel, Monel or nickel.

For any inquiry on a possible use of tubing, or for help from Bundy engineers on any problem, just call or write: Bundy Tubing Company, Detroit 14, Michigan.

WHY BUNDYWELD IS BETTER TUBING



Bundyweld Tubing starts as a single strip of basic metal, coated with a bonding metal.



It is continuously rolled twice laterally. Walls of uniform thickness assured by close-tolerance strip.



Bonding metal is completely fused to basic metal. Finished tube is strong, ductile, free from scale.



Standard sizes up to 3/4" O.D., in steel (copper or tin coated), Monel or nickel. Special sizes available.

BUNDY TUBING

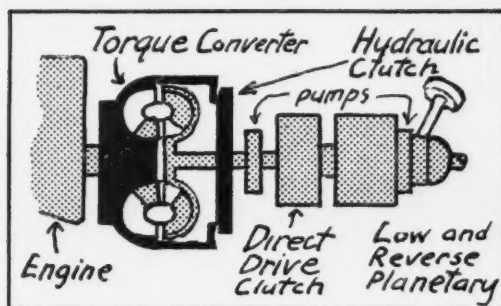


ENGINEERED TO YOUR EXPECTATIONS

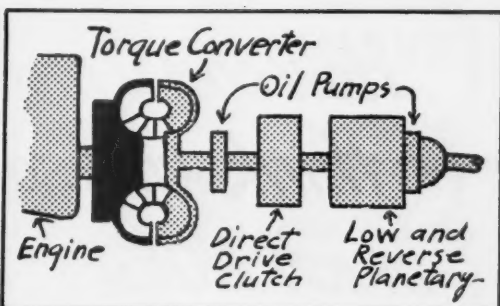
*REG. U.S. PAT. OFF.

Bundy Tubing Distributors and Representatives: Cambridge 42, Mass.: Austin-Hastings Co., Inc., 226 Binney St. • Chattanooga 2, Tenn.: Peirson-Deakins Co., 823-824 Chattanooga Bank Bldg. • Chicago 32, Ill.: Lapham-Hickey Co., 3333 W. 47th Place • Elizabeth, New Jersey: A. B. Murray Co., Inc., Post Office Box 476 • Philadelphia 3, Penn.: Rutan & Co., 404 Architects Bldg. • San Francisco 10, Calif.: Pacific Metals Co., Ltd., 3100 19th St. • Seattle 4, Wash.: Eagle Metals Co., 3628 E. Marginal Way • Toronto 5, Ontario, Canada: Alloy Metal Sales, Ltd., 881 Bay St. • Bundyweld nickel and Monel tubing is sold by International Nickel Company distributors in principal cities.

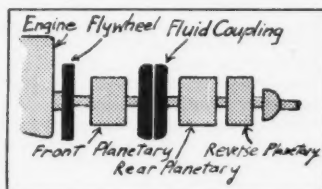
AUTOMOTIVE



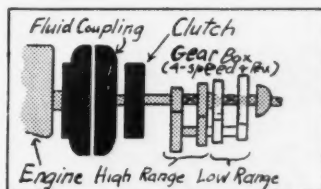
PACKARD No gears in normal driving. A torque converter changes drive ratios automatically at low speeds. But it shifts automatically to direct mechanical drive at cruising speed. Planetary transmission supplies reverse and extra-low speeds



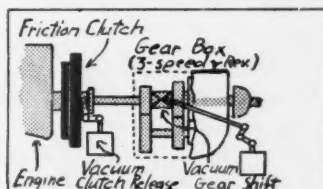
BUICK No gears in normal driving. Torque converter (Packard's is like it) provides power for starting and hard going; acts as a fluid coupling for cruising. Manually operated planetary-transmission gears provide reverse and extra-low speeds



OLDS Hydraulically operated gears. Four forward speeds with automatic shift. Fluid coupling. No clutch pedal



CHRYSLER Hydraulically operated gears. Four speeds; manual-automatic shift. Fluid coupling



HUDSON Standard gears. Vacuum-operated automatic shift between second and high. Friction clutch

Automatic Drives: Now There Are Five

Packard offers Ultramatic, the second in the industry to use a torque converter. It differs from Buick's Dynaflo in that it operates with a direct mechanical drive at cruising speeds.

The auto industry's automatic-transmission derby got a fifth entry this week. Packard Motor Car Co. announced an "Ultramatic" transmission with its 1950 Golden Anniversary models.

• **Like Dynaflo**—Ultramatic is similar in most respects to Buick's Dynaflo (BW—Jan. 17 '48, p. 21). It is a torque converter: a fluid coupling plus extra rotating members to boost the torque for starting or rough going.

But Ultramatic differs from Dynaflo in one important respect. Buick's transmission operates hydraulically at all times. Packard's transmission operates hydraulically only at low speeds, when a lot of torque is needed; at driving speed it shunts over to a direct mechanical drive.

• **Driver's Option**—The device shifts automatically from hydraulic to direct drive at 55 m.p.h. But the driver has

the option of shifting over at any speed above 15 m.p.h.; all he does to change over is to let up for an instant on the accelerator pedal.

This direct-drive feature is Packard's big addition. And it's the thing Packard ads will talk about most loudly—because, Packard says: (1) It provides all the advantages of a torque converter when high torque is needed; but (2) at driving speeds, it eliminates the torque converter's efficiency loss (a loss which results in fewer miles per gallon).

• **Sales Necessity?**—It's beginning to look as if an auto maker who doesn't have some sort of automatic transmission to offer when the buyers' market really arrives is going to be at a distinct disadvantage. You're going to be reading more and more about them in the ads. For instance:

• Chevrolet will blossom out with a

torque converter as soon as selling gets tough, industry reports say.

• Borg-Warner Corp. told its stockholders last week that it now has "two types of automatic transmissions which will shortly be offered to motor-car manufacturers." Industry talk is that Borg-Warner's announcement means Ford and Studebaker will soon offer automatic transmissions.

• Lincoln already has the right to use G.M.'s Hydramatic under license (BW—Mar. 19 '49, p. 20).

• And General Motors, already holder of two of the high cards in the game, has a third device in an advanced stage of development.

Here is how the situation stacks up now:

• **Olds' Hydramatic.** First introduced in 1939; now used also on Cadillac and Pontiac (optional). A fluid coupling plus hydraulically operated gears. Four speeds; automatic shift. No clutch pedal. No conventional gear-shift lever. A selector level for neutral, extra-low, reverse, parking.

• **Chrysler's Prestomatic** (also De Soto's

*How can a man
think with so
much **NOISE!*** ☀

*Install **FIBRETONE**[®]
-the silent partner
of "good thinking"*

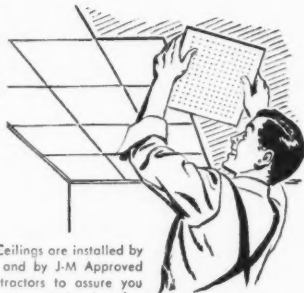
SEND for the brochure that tells you about noise-quieting Fibretone, "the ceiling with a hundred thousand noise traps"

● Tells how Fibretone acoustical panels, with their ingenious noise traps, help you get rid of irritating, unnecessary noise — noise that reduces personal efficiency in business and industry. Ask for Fibretone brochure. Johns-Manville, Dept. BW-4C, Box 290, New York 16, N. Y.

*Reg. U. S. Pat. Off.



J-M Fibretone Ceilings are installed by Johns-Manville and by J-M Approved Acoustical Contractors to assure you the utmost in noise-quieting benefits.



Johns-Manville

Gyrol Fluid Drive and Dodge's Gyromatic). First introduced in 1939. A fluid coupling plus hydraulically operated gears. Four speeds; automatic shift from 1st to 2nd (low range), and from 3rd to high (high range). Clutch pedal. Gear-shift lever: neutral, low range, high range, reverse.

Hudson's Drive-Master. Optional since 1942. Developed by Bendix. Conventional friction clutch. Conventional gears (low, 2nd, high, reverse). Automatic vacuum-controlled shifting between 2nd and high only. Conventional clutch pedal and gear-shift lever.

Buick's Dynaflo. Introduced in 1948; first torque-converter application to passenger cars. All-fluid drive offers infinite range of forward speeds between 2.4-to-1 ratio and direct drive. No clutch pedal. No gear-shift lever. A selector lever that controls a planetary-gear system and clutch for neutral, low-low, reverse, parking.

Packard's Ultramatic. Similar to Dynaflo, except that torque-converter cuts out and drive is through direct mechanical clutch at cruising speeds.

● **Cost**—How much will Ultramatic cost? Prices won't be announced until early next week. But technicians who have seen Packard's transmission plant were struck at once with one finding of cost significance: Packard has found a way to make its vane pieces by sand casting.

Sand castings are about as cheap a way as there is of getting a foundry piece. Buick, by contrast, has been using plaster molds. Buick has never given out any figures on the cost of Dynaflo (which retails around \$200). But automotive gossip in Detroit has it that the casting job involves disproportionate expense. If Packard has been able to solve that problem with sand castings—passed over by Buick in the feeling that the more precise product of plaster molds was necessary—it may well be reflected in the price.

● **Schedule**—Ultramatic will be standard equipment on Custom Eights. Later, as output increases in the company's new \$7-million transmission plant (BW-Jun.12'48,p40), it will be optional on Super Eights and Eights.

As for operating costs, Packard engineers say Ultramatic gives them slightly better results than a car with orthodox transmission. Reason: The torque converter can be more economical than routine shifting at lower speeds, while the direct drive at higher speeds uses gasoline just as any standard automobile engine would.

● **New Line**—Aside from the Ultramatic, the new Packards, built in three series, comprise normal year-to-year changes. George T. Christopher, president (cover), says they include 77 major improvements—mainly under the body shell. Appearance-wise, they are modified only slightly from the 1949 models.

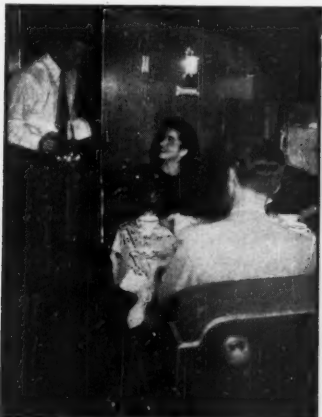
PICTURE REPORT



Luxurious Highway Yacht Has . . .

For the businessman who has to make forays outside hotel country and still wants his comfort, Flexible Co., Loudonville, Ohio, has a self-propelled answer. It's this custom-built, self-contained land cruiser, which has all the comforts of home—except an over-supply of room. The cruiser is built on a standard coach body and is powered with a 144-hp.

Buick engine. One of its exterior features is a roof with a flat deck on it. Here folding chairs may be set up, giving the owner and his companions a comfortable place from which to watch a construction project, or spend a languid afternoon at a horseshow. The deck is reached by a detachable ladder just behind the front right wheel.



... Living Quarters for Seven Inside

The land yacht's interior is divided into comfortable compartments. The one at the left is in the stern; when the typewriter is stored away, the desk it sits on becomes a handy dressing table. At the right is a section of the owner's compartment, where the host is being served coffee by the chauffeur who doubles as chef. The galley is just aft of the driver's compartment, and is

equipped with a four-burner stove and an electric refrigerator. Since the bus is equipped with a 110-volt generator, standard household equipment may be used. The yacht has sleeping accommodations for seven, which are furnished by berths made up from seats. Flexible has sold around a dozen of these yachts at prices ranging from \$18,000 to \$33,000 depending on accessories.

Here's what
SIMONDS
means by a
"4-SQUARE
ORGANIZATION"



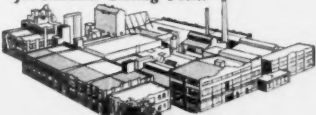
SIMONDS SAW AND STEEL CO.
Fitchburg, Mass.

First of all U. S. sawmakers, Simonds has been banking up cutting-tool experience since 1832. Today, in the world's first windowless plant, Simonds produces all types of precision saws, machine knives, files, and other tools for cutting wood, metal, paper, plastics, or what have you?



SIMONDS STEEL MILLS, Lockport, New York

One of the most modern mills producing special steels... a world-famed center of metallurgical research... *your guarantee of 100% quality-control for Simonds Cutting Tools.*



SIMONDS ABRASIVE CO., Philadelphia

One of the top producers of grinding wheels and grains. And these products like Simonds Cutting Tools, are under 100% Simonds quality-control...made only from abrasives refined by Simonds Canada Abrasive Co., Ltd., Arvida, Quebec. In fact, only Simonds Grinding Wheels are used in precision-finishing of Simonds Cutting Tools.



SIMONDS CANADA SAW CO., Montreal

This modern factory at Montreal produces Simonds Saws and Knives to serve the Dominion and Maritime Provinces . . . and so completes the coverage of Simonds Service for the entire North American Continent.





Westinghouse is a BW advertiser is a BW advertiser

20 years with **BW!**

"You can be *sure* if it's Westinghouse," is a familiar phrase associated with Westinghouse Electric Corporation. Westinghouse has used the pages of Business Week for 20 years to supplement salesmen's contacts with Management-men . . . executives who make or influence *buying decisions*. No other general business or news magazine reaches such a high concentration of these all-important buyers.

BW FIRST...FOR 11 CONSECUTIVE YEARS

Advertisers whose goods or services are sold to business and industry know that their advertising dollars "work harder"—*produce more*—when invested in Business Week. And, for 11 straight years, Business Week has carried more pages of this advertising than any other general business or news magazine. The 1948 score:

1. FIRST...

In *page* volume of business goods and services advertising.

2. FIRST...

In *number* of business goods and services advertisers.

3. FIRST...

In number of exclusive accounts in the business goods and services classifications.

Business Week is preferred by so many advertisers who sell to Business and Industry, because—

**WHEREVER YOU FIND IT, YOU FIND A
MANAGEMENT-MAN...WELL INFORMED**



Y advertiser is a BW advertiser is a BW advertiser



Manufacturers' Materials & Supplies™
10 Years or More With BW

Acme Steel Co.
Aluminum Co. of America
American Cyanamid Co.
Atlas Powder Co.
Du Pont de Nemours, E. I. & Co., Inc.
Durez Plastics & Chemicals, Inc.
General Electric Co.
Goodrich, B. F. Co., The
Goodyear Tire & Rubber Co.

Hercules Powder Co., Inc.
International Nickel of Canada
Kimberly Clark Corp.
Koppers Co., Inc.
Mallory, P. R. & Co., Inc.
Pittsburgh Steel Co.
Timken Roller Bearing Co.
U. S. Steel Corp.
Westinghouse Electric Corp.

*Source: Publishers' Information Bureau Analysis



An investment analysis that adds up to *Savings*

Investment protection with *"Automatic" Sprinklers* knows few limits from an application point of view. Take for example, B. Gertz, Inc., Long Island's largest department store which is shown in the illustrations above. Protected throughout by means of *"Automatic Sprinklers"*, the factors of true fire safety for thousands of daily customers and nearly two thousand valued employees is the management's primary aim.

But with the safety factor accomplished, let's analyze for a moment the financial considerations involved in this particular case. Insurance coverage on this multi-million dollar valued property is naturally high. Unsprinklered insurance rates would be prohibitive. Yet, based on estimates, *"Automatic Sprinkler"* protection allows for premium reductions of better than 75%, amortizes the cost of installation in less than 4 years, following which annual savings of approximately \$47,000 are realized.

That's wise investment for Gertz, Inc., and it would be for you. An executive with the slightest appreciation of business economy could hardly overlook the importance of fire safety with *"Automatic Sprinklers"*, an important investment today... perhaps welcome protection tomorrow.

"AUTOMATIC" SPRINKLER CORPORATION OF AMERICA
YOUNGSTOWN 1, OHIO

"Automatic" Sprinkler

FOR INVESTMENT PROTECTION

DEVELOPMENT • ENGINEERING

MANUFACTURE • INSTALLATION

OFFICES IN PRINCIPAL CITIES OF NORTH AND SOUTH AMERICA



TYPICAL

"Automatic" Sprinkler

PROTECTED PROPERTIES

- Industrial Plants
- Storage - Warehousing
- Mercantiles
- Piers - Wharves
- Aviation Properties
- Hospitals - Institutions
- Hotels - Apartments
- Schools - Colleges
- Offices - Public Buildings

"Automatic" FIRE-FOG

provides positive protection
for severe fire hazards

Foreign Cars

There's still a market for them in the U. S., but not such a promising one as it seemed last year.

Foreign cars got their foothold in the U. S. postwar market mainly because people couldn't find new cars—or couldn't afford them when they did. So a lot of people turned to comparatively inexpensive, easily available Austins, Fords, Fiats, Hillman-Minxes, and other small European cars.

As a result, some foreign car makers had considerable success peddling their models here (BW—Feb. 19'49, p74). But that still left a pertinent question: What would happen to sales of light foreign cars when buyers could buy the U. S. cars of their choice? Or when used-car prices really started to come down?

• **Bloom Lost**—It's still a little too early for a final answer. But by this week it was clear that the U. S. market for foreign cars has lost much of its bloom.

Latest figures from the Detroit statistical firm of R. L. Polk & Co. show that the U. S. sales of Austin Motor Co. have dropped off considerably this year. Incomplete statistics through March show new registrations of 376 Austin passenger cars in the U. S. as against 709 for the comparable period last year.

• **Running Behind**—They also show that Austin is running behind Ford of England, the other foreign car maker with national distribution. In the same period, 1,100 Anglias and Prefects were registered. Last year, however, Austin had a clear advantage over Ford of England—8,610 Austin registrations for the entire year as against 3,223 Anglia-Prefect registrations.

There are also other evidences that Austin is having to make a bid for business. Recently it cut prices on its light cars and trucks by \$75 to \$200 a model. And last week it followed up by slashing the prices of its newly introduced convertible sports coupe by \$1,000. New prices are \$2,975 and \$2,795.

• **Discounts**—Meanwhile, Ford of England is having its troubles, too. It imported somewhat more than 13,000 Anglias and Prefects last year (BW—Mar. 6'48, p110)—just in time to catch the downturn in the auto market. Close to 5,000 of them have been sitting on lots and in warehouses since; they are now moving out at rate of about 750 a month.

At Milwaukee, the pile-up in the Wisconsin distributor's warehouse led to price cuts of approximately \$500. The two-door Anglia was offered at \$995, the four-door Prefect at \$1,275. The half-ton panel truck was marked down

You can always tell the Difference

-by the Tests of the Trades



The Taste Test

In the paper industry, one of the good old tests of the trade is the taste test. An experienced man can tell by his sensitive taste if the exact amount of sizing is being mixed with the pulp.



The Bird Test

Many a man is alive today because of a little bird. You know the story . . . and nobody knows it better than miners who have "watched the birdie" to determine whether air in the shaft was safe or dangerous.



The Egg Test To most people, two eggs can look like twins. But to the man whose business is eggs it's an entirely different story. For the good of his business . . . for the sake of his profits . . . he must and *does* test each egg to count his chicks before they're hatched.

The On-The-Wall Test

Before plunging into the expense of any interior painting job a wise paint buyer determines his total costs and final results by the *on-the-wall* test. He compares different paints . . . by the amount they can be safely thinned; by the number of square feet each gallon covers; by the time and labor required to paint a given test area; by the number of coats it takes to do the job right.

Through that kind of sound testing, you'll find *without fail* that Barreled Sunlight does a better paint job for less money than any other paint on the market. This is no hollow claim. It is a fact we can prove. Your nearest Barreled Sunlight representative will gladly do it by demonstration. Write and he'll call at your convenience.

U. S. GUTTA PERCHA PAINT CO., 1-D DUDLEY ST., PROVIDENCE, R. I.

Barreled
Sunlight
Paints



In whitest white or clean, clear, pleasing colors, there's a Barreled Sunlight Paint for every job

It pays to use your custom molder's know-how says the maker of Taylor "Comparators"



W. A. Taylor, Pres.
W. A. Taylor & Co.

No. 5 in a series on Plastics Skill at Work...



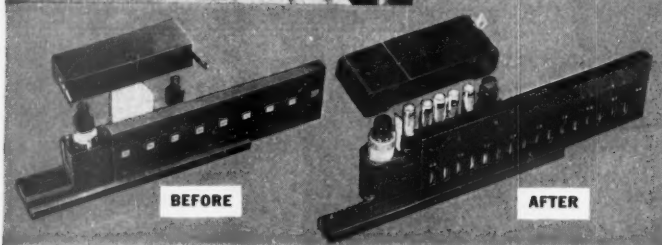
PROJECT: Five-part Slide, Body and Cover for pH and Chlorine Control Device

CUSTOMER: W. A. Taylor & Co., Baltimore, Maryland

MOLDER: Plastics Division, Colt's Manufacturing Co.

MATERIAL: Compression Molded Durez Phenolic Plastic

IMPROVEMENTS: Reduced weight, faster assembly, improved appearance and wearing qualities, better talking points for salesmen



Like other products of every conceivable kind, the Comparators made by W. A. Taylor & Co. were perfect... until someone saw how to improve them.

The "someone" in this case, which is so typical it might be duplicated in your own operation, was a custom molder working with Taylor planning executives.

These Comparators were selling so fast to laboratories in 35 major industries that the maker grew concerned about production. The molder, Plastics Division of Colt's Mfg. Co., requested permission to redesign for improved speed of output, ease of use, and appearance. Experimentation with models evolved the present design, an

all-round better product molded of Durez phenolic plastics.

Right away, the restyling in Durez reduced the weight by a third, lightening work for laboratory men everywhere. Weight is also balanced better in the Durez pieces, assembly in production is faster, and window cuts are more accurate. The plastic parts, being impervious to mild acids and alkalis, and to laboratory fumes, keep their lustrous look of newness indefinitely.

Durez field men, with an experience-backlog covering the entire progress of plastics, will gladly team up with you and your molders. Call on them freely.

Durez Plastics & Chemicals, Inc., 404 Walck Rd., N. Tonawanda, N. Y.



PHENOLIC PLASTICS THAT FIT THE JOB



from \$1,681 to \$995. And in Detroit, dealer Russ Dawson was offering "demonstrators" at about \$500 off the Detroit price.

Whether this is merely a regional condition remains to be seen. One large New York City dealer reports that he is selling all the Anglias he can get. But he thinks the more expensive Prefect is priced too high to sell competitively against U.S. cars.

• **Brighter Picture**—The over-all picture may not be so dark, however, as some pessimists think. Actually, small British cars are doing better than they were early last year, before the British Fords came on the market. For despite Austin's sales dip, the two makers are selling more cars combined than Austin did alone.

Austin's U.S. headquarters takes a bright view of the future. It says that the sales slump—which began last fall—has now disappeared. And it insists none of its dealers are selling at discounts.

TRUCK-TRANSPORT SCHOOL

Western motor carriers are taking their public relations program into the schoolroom.

Under sponsorship of the Western Highway Institute, the Graduate School of Business at Stanford University in California is offering a highway transportation course.

The course is divided between lectures by men in motor transport and field study of trucking organizations. First lecturer was Philip Small, assistant to the president of Pacific Intermountain Express. Another session on the schedule will explore labor relations through the eyes of Einar Mohn of the A.F.L. Teamsters.

WILLYS PRESIDENT RESIGNS

Now it's official: James D. Mooney has resigned as president of Willys-Overland Motors, Inc.; he's staying as chairman.

The auto industry has been expecting the move: for some time it has been hearing rumors of dissension between Mooney and a majority group on Willys' board (BW—Apr. 16 '49, p. 24).

In resigning, Mooney said he took the combined job of president and chairman back in 1946 only on the proviso that he could drop the presidency after one year.

Possible successors as president:

Charles E. Sorensen, now vice-chairman, and Mooney's predecessor as president.

Arthur J. Wieland, Willys' executive vice-president.

Brouwer D. McIntyre, a Willys director and president of the Monroe (Mich.) Auto Equipment Co.

BANK of the MANHATTAN COMPANY

NEW YORK, N. Y.

150th ANNIVERSARY

1799

DIRECTORS

JOHN BROOME
Importer
AARON BURR
Lawyer
JOHN B. CHURCH
Underwriter
JOHN B. COLES
Merchant
HENRY A. COSTER
Merchant
WILLIAM EDGAR
Merchant
RICHARD HARRISON
Recorder of the City of New York
BROCKHOLST LIVINGSTON
Lawyer and Clerk of Chancery
DANIEL LUDLOW
President of the Company
and an Importer
SAMUEL OSGOOD
Member State Legislature
PASCHAL N. SMITH
Merchant
JOHN STEVENS
Engineer
JOHN WATTS
Lawyer

Condensed Statement of Condition at the end of the year in which the Company was chartered—December 31, 1799

ASSETS

Cash	\$ 447,028.76
Real Estate	30,000.00
Water Works	20,000.00
Discounts	1,181,061.81
Bonds	2,000.00
Due from Banks	1,305.35
	<u>\$1,681,395.92</u>

LIABILITIES

*Capital Stock Paid In	\$ 500,042.00
Bank Notes	364,000.00
Undivided Profits	17,817.62
Deposits	799,536.30
	<u>\$1,681,395.92</u>

*As of the above date the Capital Stock of \$2,000,000 had been fully subscribed and the initial payment made.

1949



DIRECTORS

J. STEWART BAKER
Chairman
NEAL DOW BECKER
President, Intertype Corporation
WALTER H. BENNETT
Trustee, Emigrant Industrial Savings Bank
GRAHAM R. BLAINE
Vice-Chairman
JOHN C. BORDEN
President, Borden Mills, Inc.
JAMES F. BROWNLEE
GEORGE W. BURPEE
Coverdale & Colpitts
HARRY I. CAESAR
H. A. Caesar & Co.
ROBERT M. CATHARINE
President, Dollar Savings Bank of the City of New York
F. ARBOTH GOODHUE
Retired
WILLIAM V. GRIFFIN
Chairman, Brady Security & Realty Corporation
LAWRENCE C. MARSHALL
President
HENRY D. MERCER
President, States Marine Corporation
GEORGE L. MORRISON
President, General Baking Company
WILLIAM J. MURRAY, JR.
President and Chairman, McKesson & Robbins, Inc.
FRANK F. RUSSELL
President, Cerro de Pasco Copper Corporation
FREDERICK SHEFFIELD
Webster, Sheffield & Horan
PHILIP YOUNG
Dean, Columbia University School of Business

Condensed Statement of Condition 150 years from the date the Company was chartered—April 2, 1949

ASSETS

Cash and Due from Banks and Bankers	\$ 361,245,565.17
U. S. Government Obligations	309,621,976.03
Other Public Securities	12,470,931.71
Other Securities	10,996,215.79
Loans and Discounts	408,646,590.26
F.H.A. Insured Mortgages	33,662,055.53
Other Real Estate Mortgages	2,424,979.01
Banking Houses Owned	11,321,981.66
Customers' Liability for Acceptances	5,746,412.80
Other Assets	2,972,622.20
Liability of Others on Bills Sold Endorsed	7,797,221.29
	<u>\$1,166,906,551.45</u>

LIABILITIES

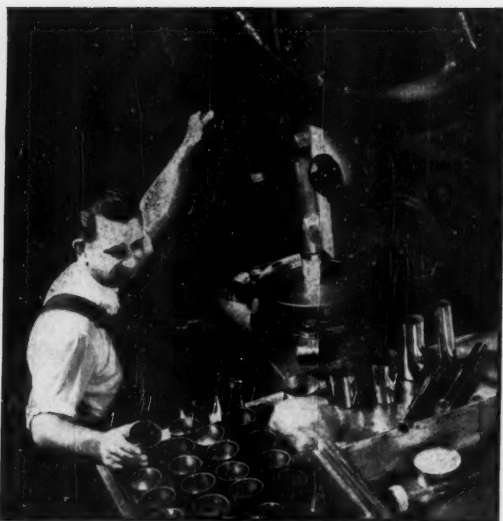
Capital (2,000,000 shares)	\$20,000,000.00
Surplus	30,000,000.00
Undivided Profits	17,171,456.67
Deposits	1,080,919,916.20
Acceptances Outstanding	6,328,048.45
Other Liabilities, Reserve for Taxes, etc.	4,689,908.84
Bills Sold With Our Endorsement	7,797,221.29
	<u>\$1,166,906,551.45</u>

Of the above assets \$71,784,613.29 are pledged to secure public deposits and for other purposes; and certain of the above deposits are preferred as provided by law.
Member Federal Reserve System Member Federal Deposit Insurance Corporation

PRODUCTION

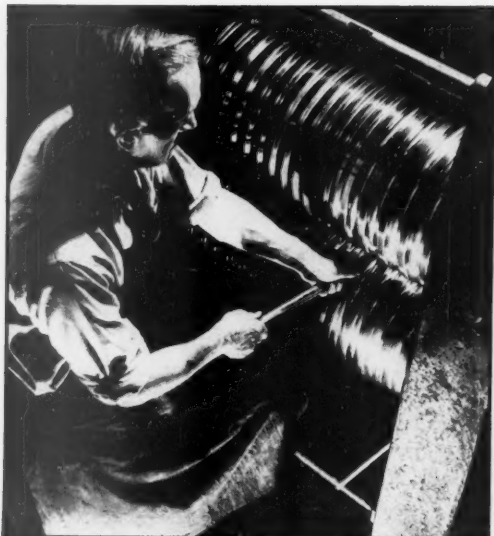


1 Making a strip of alloy gold is American Optical Co.'s first step in spectacle-frame manufacture. The gold starts as 24k; it is melted with an alloy to a fineness of 10k-12k

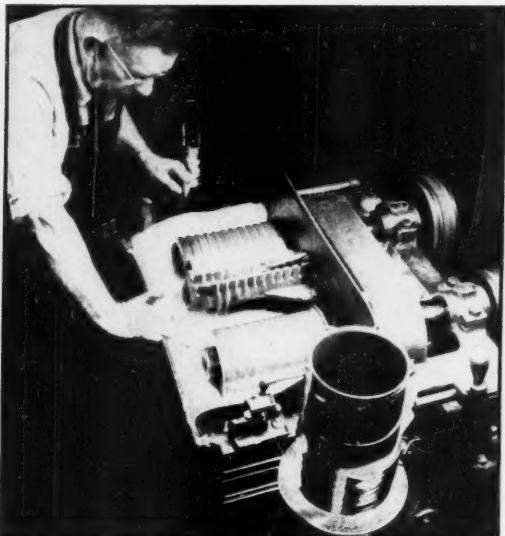


2 Gold strip is made into a gold-filled bar. This is done on a press by "cupping" the sheet, filling the cup with base metal, then soldering two together to make foot-long metal bars

Machines—Plus Skill—Make Spectacle Frames



3 The foot-long gold-filled bars are rolled until they become 8 ft. long. They are then inspected for flaws and are then ready for further reduction to wire



4 Diamond dies can reduce the wire to a thickness of 10 one-thousandths in. Such wire is used for winding temple ends (TURN TO PAGE 42)



FOR EVERY ADDED CAR...

\$530 More Needed for Oil Facilities

For every additional car that rolls onto America's highways the oil industry must put up \$530 more in new capital.

It takes that much for equipment to find, produce, and transport the added gasoline and oil needed to keep it running.

To supply oil for each additional oil burner, the industry invests \$670;

for a truck, \$970; for a Diesel locomotive, \$108,000; for a transport plane, \$221,000.

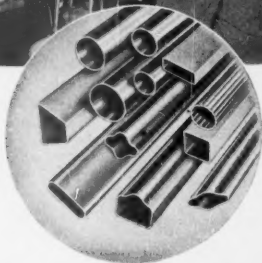
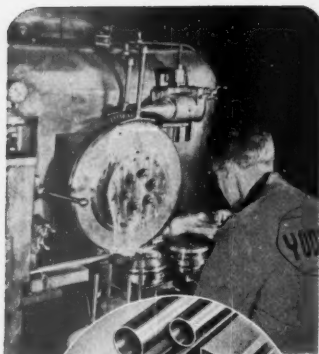
And because Americans use more cars, more trucks, more trains, more planes every year, it takes more and more money at work all the time to keep oil flowing out of the earth at the rate they use it.

This money comes from invest-

ments—from stockholders and from earnings put back into the business to meet the always expanding needs. Sound investments like these are for your future. Soundly and progressively managed, they give you assurance of oil to meet your growing needs.

*The better you live,
the more oil you use...*

STANDARD OIL COMPANY (NEW JERSEY)



MAKING WELDED TUBING

the easy YODER way

Yoder electric resistance-weld Tube Mills make pipe and tubing in sizes from $\frac{1}{4}$ " to 36" dia. For monthly requirements upwards of 500,000 feet, they offer a rare combination of lowest first cost with lowest operating and maintenance cost. One operator with a helper can produce up to 50,000 feet per day, in sizes up to 3" diameter.

Weld strength, accuracy in size, thickness and roundness meet requirements for most purposes, including boiler tubes, conduit, auto axle housings, chrome plating, etc. Simplicity of operation and easy, positive controls distinguish Yoder mills. Get the facts—send for 64-page book of information on physical properties of product, weld strength, costs, operating speeds, labor and skill required, training of operators, maintenance, end uses, etc.

THE YODER COMPANY
5530 Walworth Ave. • Cleveland 2, Ohio

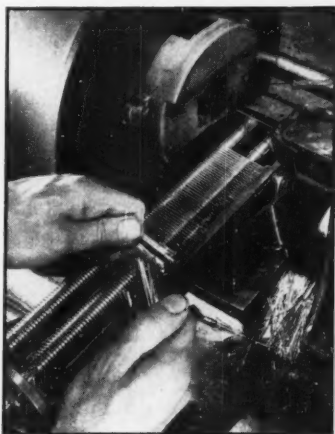


TUBE MILL MACHINERY

SPECTACLE FRAMES (continued from page 40)



5 Press "blanks out" bridges for spectacles from sheet stock. Many other parts used in spectacle manufacture are also made from sheet-metal stock

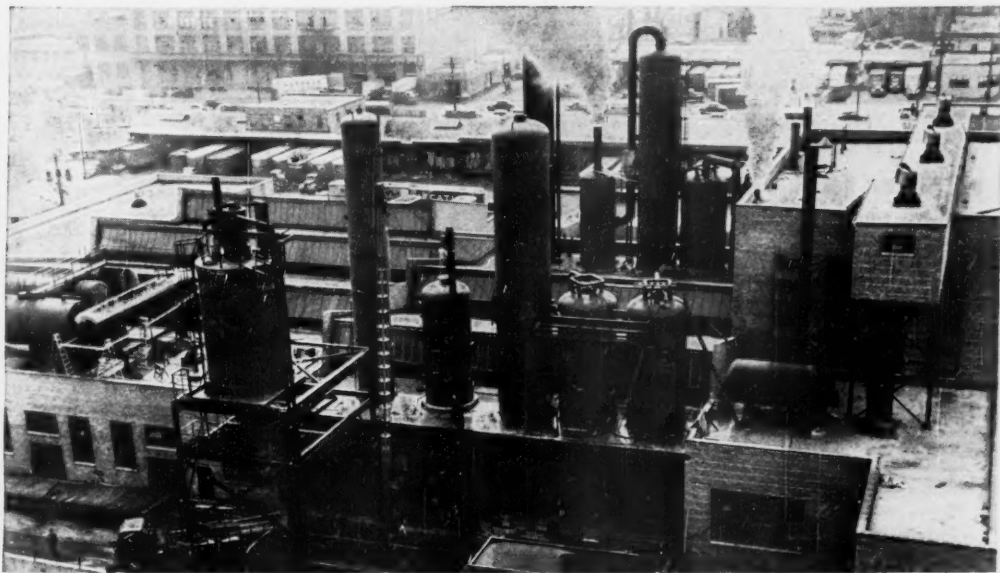


6 Reducing machine "hammers out" gold wire to form temple butts, after the wire is cut to length. A liquid cools work



7 Press forms lens arms in a series of operations that require manual as well as mechanical skill (TURN TO PAGE 44)

Works speak louder than words



● "Dry-Ice" Plant, First Class

Designed, engineered and constructed by Girdler with
and for Pure Carbonic, Incorporated

GAS PROCESSES DIVISION

THE *GIRDLER* CORPORATION

LOUISVILLE 1, KENTUCKY

Designers, Engineers, and Constructors

LOCATION: Chicago, Illinois.

DAILY OUTPUT: More than 140 tons of "Dry-Ice" (solid carbon dioxide).

OPERATION: Continuous, economical, with latest "Dry-Ice" process improvements.

OWNERS: Pure Carbonic, Inc.

Effective and economical process plants have been constructed by Girdler for every major industry concerned with the industrial gases, gaseous and liquid hydrocarbons, and organic compounds.

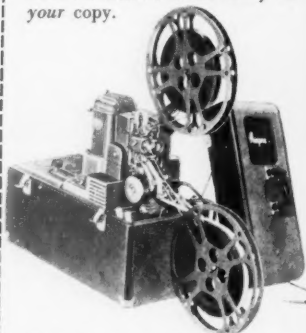
If your facilities in these categories are due for expansion, modernization, or replacement, your request for conference with a Girdler engineer is respectfully invited.

**learn how
sound movies
can pay off for YOU!**



send for FREE book

It is packed full of *new ideas* on public relations, sales training, personnel management—and other important problems. It tells you how easy, how profitable it can be to use 16mm. sound movies in your own business. It is a *practical* book. It tells how the most dramatic business aid in years has been used by major concerns all over the nation. Write today for your copy.



New Ampro "Compact" 16mm. Sound Projector

Helps motion pictures produce better results. For here is a complete 16mm. sound projection unit—projector, amplifier, speaker, film—all in one portable case. Projector swings up into operating position in a few seconds. Sturdy, trouble-free, simple to operate, easy to service—and built at an economy price.

Write Today
for circular giving
specifications,
prices and full de-
tails on the new
Ampro "Compact."



*T. M. Reg. U. S. Pat. Off.

AMPRO CORPORATION BW 430
2835 N. Western Ave., Chicago 18, Ill.

Please send me full details, specifications and price on the Ampro "Compact" 16mm. Sound Projector, also free booklet, "A Powerful Aid for Industry."

Name _____

Address _____

City _____

State _____

A General Precision Equipment Corporation Subsidiary

SPECTACLE FRAMES (continued from page 42)



8 Soldering next joins arm and strap assembly with gold. The solder used to join the parts is also gold



9 Handwork is necessary to form the temple pieces of the frames. Both right and left sides must be formed



10 Automatic screw machine is used to turn out screws 0.054 in. in diameter. These screws are used to fasten the temples to the frames (TURN TO PAGE 46)



...when it comes to
DIRTY JOBS!

At really dirty jobs... grimy, gritty jobs where little protection is offered against the elements... motors must be protected to insure continuous, efficient operation.

A Wagner 15 hp. type CP totally-enclosed, fan-cooled motor, for instance, has been giving years of service at the job of pulling railroad cars into loading position under a hopper in a coal yard. No outside protection is offered against the weather, or the grimy dirt from the coal. But the Wagner CP motor is provided with built-in protection to the extent of not requiring any repair or service other than simple lubrication even after years of rugged service.

Just as there is a Wagner motor to qualify for this specific type of job, there is one to answer every need for a standard type of electric motor in sizes from 1/125 hp. to 400 hp. Wagner makes a complete line of standard motors for all current specifications, with a wide variety of enclosure types and mountings.

Wagner engineers are qualified to specify the correct motor for your requirements. Consult the nearest of our 29 branch offices or write us.

Wagner Electric Corporation

6460 PLYMOUTH AVENUE, ST. LOUIS 14, MO., U. S. A.

Wagner totally-enclosed motors from 1/4 hp. to 200 hp. can be used under most severe operating conditions... fully protected against dirt, metallic dust, abrasive materials, fumes or moisture. They feature economical operation and continuous trouble-free service.



ELECTRIC MOTORS • TRANSFORMERS
INDUSTRIAL BRAKES
AUTOMOTIVE BRAKE SYSTEMS - AIR AND HYDRAULIC



**Put the
"FINGER"
on these
"HIDDEN" LOSSES**

**Own Your Own
KELLOGG
SELECT-O-PHONE**
Automatic Private Telephone
and Paging System

• You may never see these losses on the books—but they can be a serious drain on your profits!

Man-hours lost because people are away from their desks . . . Decisions held up or muffed by lack of facts right when they're needed . . . Hours wasted for the executive staff because it can't get together for a conference . . . Time wasted for everyone because the central switchboard is jammed with "inside" calls . . . Outside calls delayed, with orders lost or customers antagonized.

Do away with all of these losses with Kellogg Select-O-Phone System. It's economical to buy, simple to install, needs no operator, involves no rental. It pays for itself in direct savings in as few as two years.



**Tell It—
Don't
Yell It**

A True Telephone System. Completely private—no loudspeaker din. Instant dial service for 5 to 48 desks. Anyone can call anyone else—or initiate a full conference. Fully automatic—cuts switchboard load 25 to 50 percent.

**Nothing on your desk but a telephone.
Complete privacy always.**

Mail the Coupon for Full Details

Select-O-Phone Division
Kellogg Switchboard and Supply Company
6666 S. Cicero Avenue, Chicago 38, Ill.
Please send the facts on how Select-O-Phone can save money for our company.

NAME _____
COMPANY _____
ADDRESS _____
CITY _____ STATE _____

SPECTACLE FRAMES (continued from page 44)



11 After several hundred operations and inspections, gold bars eventually become frames for: safety goggles (left); spectacles (center); and sunglasses (right)

Wider Market, More Frames

American Optical Co. centralizes spectacle-frame making in new plant. There it combines the skill of hand labor with the speed of machines to increase its production.

Since the war, more and more people have become "spectacle conscious." For one thing, women working in war plants learned about safety glasses, got accustomed to the idea of wearing goggles. Manufacturers were quick to pick up the trend, promoting sunglasses, new types of frames, new shapes of lens, tying in the fashion note to make glasses a prominent part of a costume (BW—Jul. 12 '47, p. 31).

So spectacle making—always a big business—has grown bigger. There have been strides ahead in lens manufacture to keep up with the wider market (BW—Sep. 4 '48, p. 40). And every pair of lenses needs a frame. This week American Optical Co. made public what it has done to boost frame output in a new plant at Southbridge, Mass. It supplies the ophthalmic (eye) profession.

• **Breaking Down Operations**—American Optical doesn't make spectacles on an assembly line, because there are too many variations and styles for that. Instead, operations are broken down into various "flow" systems. At one time, for example, in American's plant, 500 frames of one type, 2,000 of another, 300 special lens arms, 1,000 temple butts and 500 nose pads might play tag with each other on their way to the finishing room.

The flow-system idea was pioneered by Elmer L. Schumacher, member of

American's board of trustees. It entails a close blending of both machine and hand operations to maintain precision manufacture—and at the same time keep parts flowing from department to department in a steady stream without piling up.

The net result is to combine mass production with precision methods. The former means using machines as much as possible; the latter brings in an inevitable amount of handwork. Much of that handwork is done by women. About one-third of the frame plant's employees are women.

• **Unique**—The machine-handcraft idea was behind American's shift of its scattered frame-production departments into a unique new factory. This centralization made the "flow" systems possible.

In the job of shifting operations, the first department to go over was the tool-and-die division, then the gold-bar-reducing rooms, and then the blanking and other operations.

American doesn't confine its frames to gold, of course. It also works in other metals and plastics.



• **Market**—American Optical has been in operation 116 years, looks for steadily rising business over the next few years. One reason: A recent survey shows that over 67% of all U.S. adults now wear glasses all or part of the time.

Now on Duty in Alaska

WITH THE U. S. AIR FORCE!



YES! After exhaustive AIR FORCE TESTS - then SPECIAL TESTS

by ten "bush pilots" - the U. S. Air Force  ordered 14 production-line Cessna 195s for rugged Alaskan work! Cessna considers it a great honor to have a standard civilian plane picked to serve with the finest Air Force on earth  ... And is also proud that two of these ships are serving the U. S. National Guard!



HIGH WING DESIGN for greater stability.
You ride in the shade—enjoy the scenery!





AIRLINE-TYPE ENGINES! A 300 H.P. Jacobs
in the 195. A 240 H.P. Continental in the 190.

Room for 4 with lots of luggage
... 5 if you're traveling light!

Cruising Speeds—Over 165
m.p.h. Range—over 700 miles.

All-metal construction throughout.

Hamilton Standard Constant Speed Propellers.

A MONEY MAKER  - A MONEY SAVER - for you, your company! A modern tool you can't afford not to use! That's the Cessna 195...or 190! For these fast, 4-5 place  executive airliners enable high-salaried, hard-to-find "key men"  to be more places, get more done...with less fatigue, more time at home! They're just the right size for the average executive group -- cruises at over 165 m.p.h.- have every safety and comfort feature.  Yet maintenance and operating costs are surprisingly low! See them - see your Cessna dealer today!

USE THIS COUPON or See Your Nearest Cessna Dealer

Cessna Aircraft Co., Dept. BW-4, Wichita, Kansas.
Please send free literature giving complete description of the Cessna 170 (), Cessna 120, 140 (), Cessna 190, 195 (), literature for model builders ().

Name.....
Street No.....
City.....County.....
State.....Phone No.....



**Cessna
120-140**

Roomy, cross-country, 2-place planes... at light, training plane prices. Cruise at over 100 and 108 m.p.h.



**Cessna
170**

The famous low-cost, 4-place "Family Car of the Air." Now all-metal. Cruising speed—over 120 m.p.h.

CESSNA LEADS* because Cessna offers "more for the money!"

*In 1948, Cessna sold more personal planes than any other company.

Only the Country



1. Charley Cane of Rosemont, N. J., revived a tired, old, abandoned 100-acre farm in 1927 . . . built it into a \$100,000 chicken business employing nine permanent hands. Charley's eye for quality where chickens are concerned is reflected in these fine farm buildings and grounds. That's the office in the foreground (a former chicken house), and toward the rear is the Canes' idea of what a farm home should be. It was rebuilt, room by room, from the original stone farmhouse, dated 1833.



2. Here, in the office, Charley Cane, who can't say "No," often has to explain to his sister-in-law, Miss Emily Stauffer, what to say to a customer whose order for chicks he can't possibly fill. A half-million Cane-raised quality chicks a year simply aren't enough to go 'round. Miss Stauffer handles all the book-work.

3. Phil Cane and his father, who is noted for selectivity and rigid culling at all stages of growth, examine chicks before shipment.



The best people in The Country

turn to Country Gentleman for Better Farming, Better Living

offers so much

Room to breathe, to grow, to enjoy life . . . the opportunity to put brawn and brain to work for better living . . . that's what the Canes wanted. Today this Country Gentleman family of poultry farmers has everything that makes living better—because with them quality, in both the chicken and the egg, has always come first.



4. Mrs. Cane is well known to nearby storekeepers. Here she is at grocery in Rosemont where she buys everything from soup to nuts (not including chickens or eggs) to feed her hearty-eating family. Her shopping list fills a substantial market basket.



5. Friends are often seated at the long dining table in the charming Cane home. Note fireplace, the pine paneling, furnishings. The entire house reflects the good taste shown here.



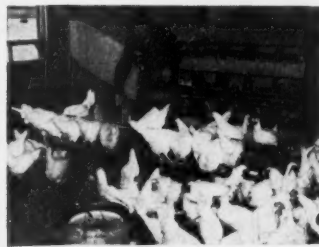
6. In the heart of the house—the kitchen—Mrs. Cane has every efficient convenience to good living, including two big home freezers.



7. The Canes enjoy television because it is "opening up new horizons" for them. They believe that good living on farms should provide everything city people have plus the things that only the country can give them.



8. A fine blending by Mrs. Cane of furniture and fabrics turns an ordinary room into a decorator's delight. The Canes have built gracious living into their old farmhouse.



9. Jacob Cole, first and oldest of Charley Cane's employees, feeds some of the Leghorns. With 3000 layers and 40,000 started birds and breeding cockerels, there is plenty of feeding to do.

Quality appeals to quality . . . Country Gentleman attracts and holds the interest of the nation's best farm families. Of every 100 families, 87 protect their property with insurance . . . and 99% of Country Gentleman families carry some form of insurance!



2,300,000 circulation concentrated among the "top half" farm families who receive 90% of all U. S. farm income.

In over half of all U. S. counties, Country Gentleman circulation exceeds that of the biggest general weekly and biggest monthly magazine.



**are an aid to
mass production**

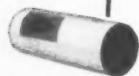
Your production department will appreciate the time and money-saving advantages of the precision manufacturing, sound engineering and uniform materials of Gaylord Boxes. Your product must fit "snug as a bug in a rug," must be fully protected against the hazards of frequent, and not always careful, handling as it travels through the steps of distribution to the final user.



Corrugated and
Solid Fibre
Boxes



Folding
Cartons



Kraft Paper
and Specialties



Kraft
Grocery Bags
and Sacks

Call Nearest Sales Office for Prompt Service

GAYLORD CONTAINER CORPORATION

General Offices: ST. LOUIS

New York • Chicago • San Francisco • Atlanta • New Orleans • Jersey City
Seattle • Indianapolis • Houston • Los Angeles • Oakland • Minneapolis • Detroit
Jacksonville • Columbus • Fort Worth • Tampa • Cincinnati • Dallas • Des
Moines • Oklahoma City • Greenville • Portland • St. Louis • San Antonio
Memphis • Kansas City • Bogalusa • Milwaukee • Chattanooga • Wealaco
New Haven • Appleton • Hickory • Greensboro • Sumter • Jackson • Miami

Cheaper Perlite

Great Lakes Carbon finds purer deposits that will make the lightweight ore competitive for use in mixing plaster.

If it weren't for the cost of producing it, perlite ore would have wider use in construction: It's much lighter than the ordinary sand used in building materials. Exploded in the manufacturing process, the volcanic glass expands to five times its original volume. Pound for pound, perlite plaster gives 2.7 times the coverage you get from plaster made with sand.

Great Lakes Carbon Corp. now thinks it has licked the cost factor. This has been due to the impurities, found in most deposits, which have boosted the cost of extraction. Great Lakes Carbon has found some deposits pure enough to cut the processing costs of Permalite, its brand of processed perlite.

Company geologists assayed more than 500 perlite-ore deposits in the Southwest to find five which make processing worthwhile. There are about 25-million tons of nearly pure perlite ore in these deposits—enough to keep Great Lakes Carbon going for some time.

On the strength of that, the company is expanding its production. It is (1) doubling the capacity of its Torrence (Calif.) processing plant; (2) putting up a new plant at Linden, N. J., which will shortly start turning out 80 tons of Permalite a day. The company also plans to build a Chicago plant to take care of the midwestern market.

ELECTRONIC CALCULATOR

Math problems that would take forty years with pencil and paper will be solved in two weeks by the two electronic calculators in production at the University of Illinois. One machine will be for university use, the other for the Army Ordnance Dept.

The calculator's "memory" is the screen of a 4-in. television tube. Combinations of numbers are "written" on the screen by an electronic beam. The beam places pin-points of light in any pattern on the screen up to 256 places. Later if the beam is returned to a particular spot it can "read" the screen, reporting whether or not a charge has been previously placed there. The tube "remembers" and gives a yes or no answer.

The placing and finding activity goes on hundreds of times a second when the machine is working a problem. Split-second calculations are carried out in re-

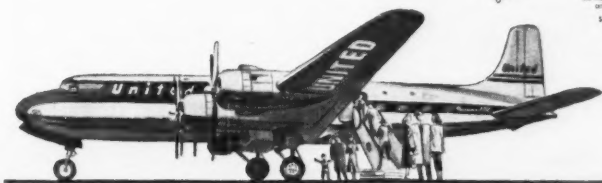
you save both

HOURS and DOLLARS



when you

FLY UNITED



A recent check showed that 85% of the people interviewed thought air travel cost more than it actually does. A good many people, otherwise well informed, still have the idea that the time-saving convenience of flying *must* cost more than surface travel.

The facts often prove the contrary. Today, when costs are becoming increasingly important, the question is "can you and your associates afford *not* to go by air?"

Here is an example of the direct cash savings offered by United Air Lines to you and your employees. You can be assured that your "out of pocket" costs on United between many other cities are favorably comparable to rail-plus-Pullman costs.

**CHICAGO
TO
NEW YORK
ROUND TRIP**

	Standard Rail	United Air Lines
First-class fare	\$65.40	\$83.80 (inc. meals)
Lower berth	15.50	
15% tax	12.14	12.57
Meals	7.50*	NO EXTRA charge
TOTAL COST	\$100.54	\$96.37

*Meals—extra-fare trains would be even higher.
*Figured on basis of \$1.25 for breakfast,
\$2.50 for dinner, each way.

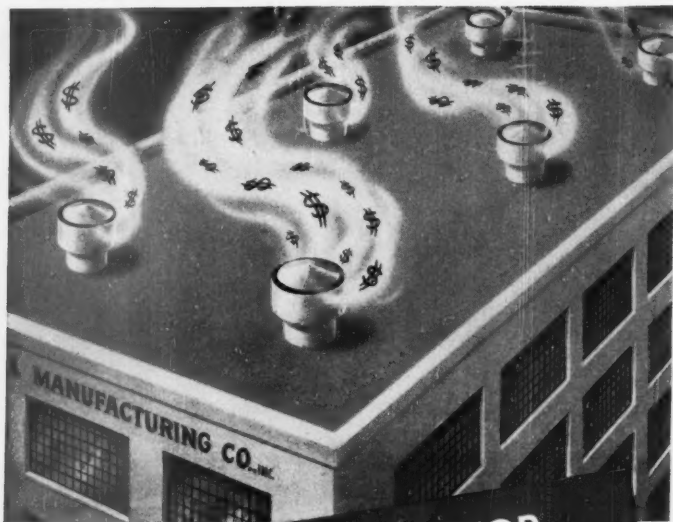
The biggest economy of all, of course, is in *time*. On cross-continent trips, you can add the value of several business days to the cash savings made by flying. On short intercity trips, you can go over and back the same day!

United's Main Line Airway takes you nearly everywhere. It links the major cities of the East and Midwest with all the West and Hawaii. You enjoy the comfort and courtesy of Mainliner service, with the finest meals aloft at no extra cost. And fast, long-range DC-6 Mainliner 300s, pressurized for altitude flying, take you above or around the weather—get you there on time.

We suggest that you invite a United representative to study *your* transportation problems. He can save you dollars and time! For reservations call your United Air Lines ticket office or an authorized travel agent.

THE MAIN LINE AIRWAY





**Here's a way to STOP
WASTE and make money too!**

Solvents vented into the atmosphere are a nuisance and a downright waste! You can stop both with a

BLAW-KNOX SOLVENT RECOVERY PLANT

After a study of your plant, Blaw-Knox engineers tell you how much you can recover (generally more than 90%); how quickly the system will pay for itself (usually in 3 to 5 years) and ever afterward earn dividends.

These low cost, economically operated solvent recovery systems are designed, fabricated, installed and turned over to you ready to go... all under one responsibility. We welcome an engineer-to-engineer discussion.

Here are a few industrial applications:

RUBBER COATINGS • DRY CLEANING • FERMENTATION • DEGREASING • LINOLEUM MANUFACTURING • PLASTICS MANUFACTURING • PRINTING • PAINTING • SOLVENT OIL EXTRACTION • CABLE MANUFACTURING



sponse to complex predetermined instructions.

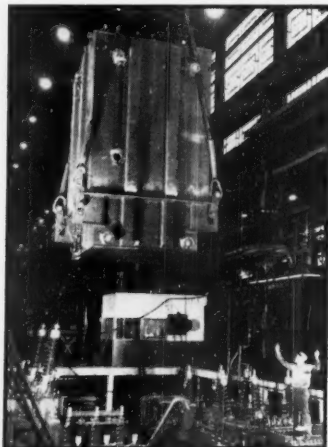
Tubes now available can retain only 256 dots on the screen. But the engineers hope to increase the number to a thousand and therefore increase the scope of the problems that can be worked out on the machine.

CHEMICAL FROST

Koppers Co., Inc., Pittsburgh, is testing a chemical that acts as a man-made frost; it drops the leaves off cotton plants before harvest. The chemical, made from coal, is ammonium thiocyanate.

Physiologists still don't know why it works, but they are satisfied with how it works: After the chemical is sprayed over a cotton crop from an airplane, the leaves prematurely wither, die, and drop off. Pickers can then do a faster and cleaner job with the leaves gone. And mechanical pickers won't pick up leaves—which stain the cotton with leaf juices.

Extensive tests are also under way on edible dry beans, soybeans, and ramie. If results come up to Koppers' expectations in 1949, it plans to distribute the defoliant nationwide.



King Size Transformer

This 145,000-kva. transformer could supply all the electrical power needed for a city the size of Akron, Ohio. Westinghouse Electric Corp., the maker, thinks its ratings make it the most powerful yet designed. The 121-ton unit is to be installed at Detroit Edison Co.'s Trenton Channel station. It will boost the station's generating voltage from 15,000 to 135,000 v. The transformer contains 56 tons of silicon steel, 63 miles of copper wire, and 6,000 gallons of insulating and cooling oil.

PRODUCTION BRIEFS

Injecting natural gas into oil fields increases the ultimate yield by maintaining reservoir oil pressure. Bureau of Mines says one experiment squeezed 13% more out of a West Virginia field than had been originally estimated.

Union Carbide & Carbon's \$50-million industrial development between Marietta, Ohio, and Parkersburg, W. Va., is ready to move out of the blueprint stage. Company is closing contracts for three separate plants to turn out alloy steels, plastics, carbon products.

"Rigidized" metal tubing of welded carbon steel helps manufacturers of furniture and display equipment, says Rigidized Metal Corp. The Buffalo company claims that its tubing resists marring during fabrication, costs less to plate because it doesn't require polishing.

The gas industry will review its developments in the fields of chemistry and production May 23 to 25 at the Hotel New Yorker, New York. Sponsor is the American Gas Assn.

Order for 14,000 looms—possibly a record—has been closed by Draper Corp. They will go to The Springs Cotton Mills, which has just completed a \$15-million bleachery. The new looms will turn out 64-in. and 112-in. widths of fabric.

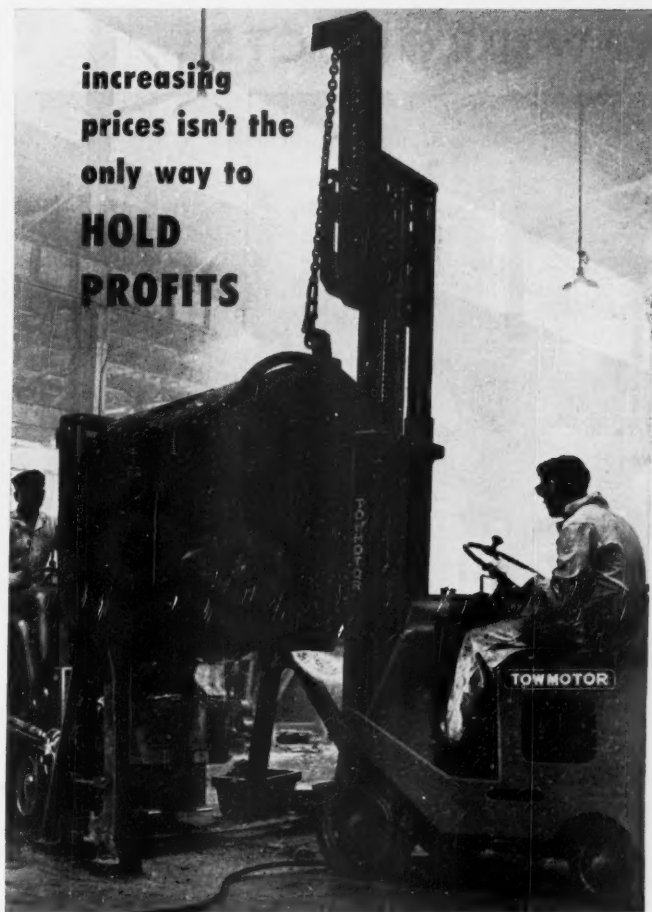
Electrical heating element that you spray on the surface to be heated is being produced by Electrofilm Corp., of North Hollywood. Heat transfer is between 90% and 95%. Industrial users will get a crack at the product after Air Force orders are filled.

Building-practices study by Armour Research Foundation now appears in book form. For a copy of Standardized Lathing and Plastering Practices write: Office of Technical Services, Dept. of Commerce, Washington 25. Price: \$3.50.

Coal from oil will power a train for the first time May 8 on a 188-mile run out of St. Louis. Trip to Louisiana, Mo., opens dedication ceremony of Bureau of Mines' coal-to-oil demonstration plants there.

Automatic tongs for cold-rolled steel strip eliminate necessity of crews working close to hot annealing covers at Ford's River Rouge plant. Pittsburgh's Heppenstall Co. helped design the tongs, which stack one roll on top of another without damage to metal edges.

increasing
prices isn't the
only way to
**HOLD
PROFITS**



Today, the best way to hold profits is to reduce costs. With Towmotor Mass Handling, production costs can be cut 20% to 30%. Towmotor Fork Lift Trucks and Accessories maintain a steady flow of production, speed finished products to freight cars or trucks, operate full capacity 24 hours a day. Write today for your copy of Handling Materials Illustrated. Towmotor Corporation, Division 2, 1226 E. 152nd St., Cleveland 10, Ohio. Representatives in all Principal Cities in U. S. and Canada.

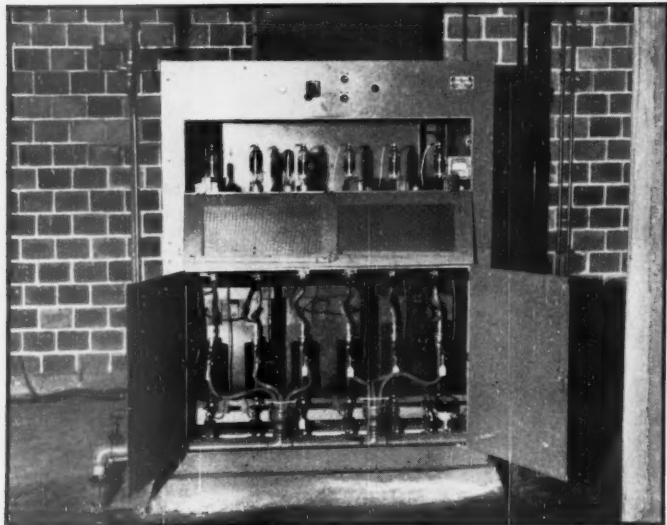
Towmotor Nation-Wide Service facilities are available in your local area—an important part of Towmotor Mass Handling operations.



**FORK LIFT TRUCKS
and TRACTORS**

RECEIVING • PROCESSING • STORAGE • DISTRIBUTION

NEW PRODUCTS



Electronics Control D.C. Motor Performance

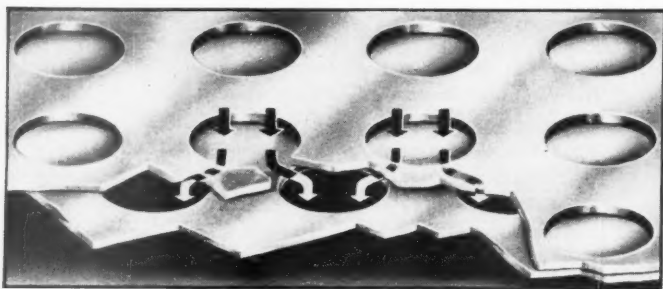
Another electronic motor control, the Varitronic Drive, has hit the market. Made by Industrial Associates, 8845 W. Olympic Blvd., Beverly Hills, Calif., it controls the performance of d.c. motors. The unit keeps motors at either constant torque or constant horsepower ratings—within limits of 2% of the set speed.

The company says that you can use the control as a remote push-button

unit; it will handle dynamic braking, automatic reversing, inching, and jogging without overloading or damage to the motor.

You can install the control on motors already in use; in some cases you will be able to eliminate transmission, clutch and belt systems. The company adjusts the drive, before delivery, to meet the needs of your particular installation.

• Availability: four weeks.



Punched Metal Sheets Act as Filter

If you have corrosion or clogging troubles, W. S. Rockwell Co. suggests its "Neva-Clog" metallic filter to separate solids from liquids.

"Neva-Clog" is made up in this way: Two sheets of metal of a desired gage are punched with holes of suitable diameter. (The holes cover the entire area of the sheets; the spacing between

holes is the same as the diameter of the holes.) One sheet is then superimposed on the other, and the two are spot-welded together.

The sheets are so placed that the edges of the upper holes just miss touching the edges of the lower holes. Liquids passing through the holes turn at right angles to traverse the space be-

tween the sheets. They make another right-angle turn to pass out through the lower holes. Particles to be filtered out of the solution are too large to squeeze through the space between the sheets.

Collected residue may be sluiced off. Where blow-back or back-washing cleaning systems are used, Neva-Clog will withstand all stresses without distortion or damage.

You can get the Neva-Clog filter in the metal best fitted to cope with the corrosion and abrasion characteristics of the liquids you are using. The manufacturer says it will stand up longer under corrosive or abrasive action than any other medium, because of its design. The company address is 200 Eliot St., Fairfield, Conn.

• Availability: immediate.

Steam Sweeper

Livingstone Engineering Co. has a steam-jet cleaner for industrial cleaning jobs. The company says its "Speedy-electric JC-30" is just the thing for cleaning machine tools, factory equipment, and shops.

High-pressure steam from an electric boiler mixes with the right amount of detergent at the nozzle of the cleaning hose. There is no excess water to dilute the detergent or flood the area or machinery being cleaned. The high-velocity jet reaches places that you can't get at with a scrub brush—high ceilings, tall machines, large equipment.

The Speedy-electric JC-30 can be wheeled to any place in the plant. The company says that it's quiet and safe enough to use during regular working hours; because there are no sparks or flames, it can be used inside oil refineries, paint works, and chemical plants.

The machine takes up 27x40 in.; requires 220 v., a.c., single or polyphase power sources; is Underwriters' Laboratories approved.

• Availability: three weeks.

Lightweight Hand Hoist

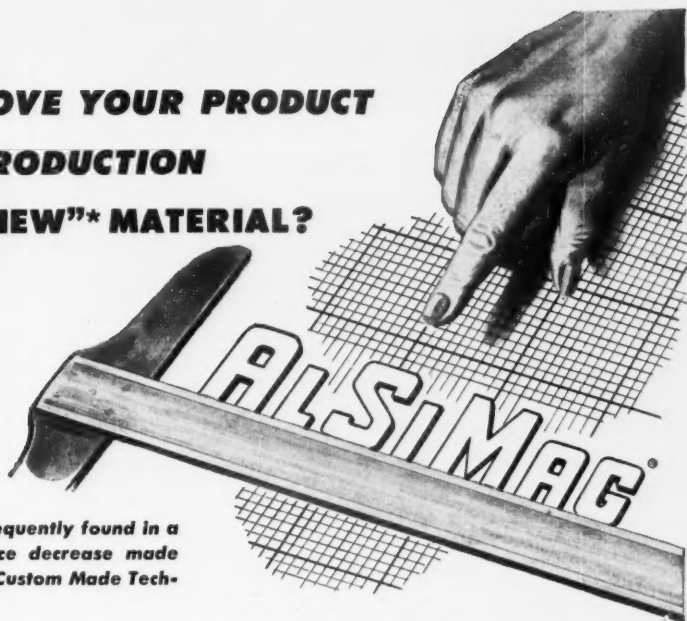
American Gage and Mfg. Co.'s Power Pull is a stream-lined version of the old block and tackle. One man can lift or pull loads up to 1½ tons with this 6-lb. hoist.

Power Pull is hung into place like the block and tackle. A hand-operated lever rotates a drum that winds up the cable attached to the load. The ratio between the lever and lifting action is 16 to 1. There's a catch on the hand-lever for switching to automatic let-downs of any length you want.

The hoist comes in a combination of models. Capacities range from ¾ ton to 1½ tons; there are four cable lengths—from 41 in. to 144 in. All models are tested for 50% overloads.

The manufacturer recommends Power

CAN YOU IMPROVE YOUR PRODUCT OR PRODUCTION WITH THIS "NEW"* MATERIAL?



The answer to competition is frequently found in a product improvement or a price decrease made possible by the use of ALSiMag Custom Made Technical Ceramic Components.

ALSiMag is the trade marked name of a large family of technical ceramic compositions. ALSiMag ceramics are custom made, as to physical characteristics and size and shape. Various raw materials, fluxes, pressures, processes and firing temperatures permit the production of ceramics with various characteristics to meet particular uses.

Given the requirements of the product, our Research Division can frequently develop a special composition of the desired physical characteristics. Thus our materials are constantly "new" and different. Carefully cross-indexed research records usually permit a prompt and accurate reply to inquiries, even if they involve most unusual combinations of physical characteristics.

If your work has not kept you constantly in touch with the recent strides of progress in technical ceramics, you will want to know what the newest developments can mean to your product or production processes. If you have a problem that might be solved by a special component of unusual physical characteristics, outline that problem to us. We can indicate the possibilities of their solution by the use of ALSiMag Technical Ceramics. Your inquiry involves no cost or obligation.



**YOU MAY WISH to call
this advertisement to the attention
of the man in charge of
product development.**

GENERAL CHARACTERISTICS OF ALSIMAG TECHNICAL CERAMICS:

- A precise mineral product.
- Hard, tough, homogeneous.
- Permanently rigid.
- Wear resistant.
- Unaffected by age.
- Does not rust or corrode.
- Chemically inert.
- High mechanical strength.
- Withstands repeated hot-cold shock.
- Good resistance to impact.
- Unaffected by most industrial or operating temperatures.
- Controllable coefficient of friction.
- Controllable porosity.
- Complete range of dielectric properties.
- Uniform and accurate, both physically and dimensionally.
- Parts quickly fabricated in large quantity at low cost.

*Not new to Electronic and Electrical Engineers. Now in its 48th year of Ceramic leadership, American Lava Corporation produced over a million pieces daily for Signal Corps, Air Corps, Navy, etc., during the War. Present capacity is in excess of two million pieces a day.

AMERICAN LAVA CORPORATION

48TH YEAR OF CERAMIC LEADERSHIP
CHATTANOOGA 5, TENNESSEE

SALES OFFICES: ST. LOUIS, MO., 1123 Washington Ave., Tel: Garfield 4959 • NEWARK, NEW JERSEY, 671 Broad St., Tel: Mitchell 2-8159 • CAMBRIDGE, MASS., 38-B Brattle St. Tel: Kirkland 4498 • CHICAGO, ILL., 9 S. Clinton St., Tel: Central 1721 • LOS ANGELES, CALIF., 324 N. San Pedro St., Tel: Mutual 9079 • PHILADELPHIA, PA., 1649 N. Broad St.

BUSINESS IN MOTION

To our Colleagues in American Business...

There are many common objects which we all see almost daily. Because they are so familiar we take it for granted that they have reached final perfection. Frequently, however, this is far from being the case. An example can be found in the 2½ gallon fire extinguisher, found for years in almost every factory, school, and office. Countless fires have been put out with it, and lives, buildings, jobs, money saved. Some time ago an important maker of this type of bottom-up extinguisher decided that the latest technological developments should be put to work in both the production and design of this important device. To this end, a complete re-study of possible machines, methods, materials, and design was ordered.

These extinguishers for many years had been made largely by riveting, and soldering was used to produce tight seams. There was much hand work, which it would be desirable to reduce. Modern seam-welding techniques seemed indicated, plus mechanization of other steps, and an increased use of conveyor systems. Such an extensive program as this required careful consideration of the relationships among design materials, methods and machines. It was early decided to switch from the traditional copper to the newer and much stronger silicon bronze, which can be resistance-welded easily. The maker and Revere collaborated closely, and jointly worked out the time, temperature and pressure requirements for clean, sound welds. Revere also established the proper tempers for the body sheet so that it withstands more than the Underwriters' test pressure, but nevertheless is easily formable into a cylinder with beads that locate the top and bottom domes. Similar specifications were



written for the sheet to be drawn into those domes, and even their design was studied and recommendations made. The extinguisher manufacturer, for his part, either disposed of old machines, or rebuilt them, and in addition bought much new equipment, some of it on special order.

This program involved one of the most complete renovations of plant and product which Revere has ever observed, and Revere considers itself fortunate to have been permitted to collaborate so closely. We were able to place at the service of our customer the accumulated knowledge of our Technical Advisors, the welding section of the Research Department and in addition called upon three of the

Revere mills for practical suggestions. Revere's final step came when a number of the first extinguishers off the production line were tested in the Research Laboratory to make sure that the recommended annealing practices were adequate.

The report given here is necessarily condensed. Actually, the work occupied many months, and included a large number of con-

ferences, much correspondence, and thorough testing of methods. That it all was supremely successful is shown by the results: a fire extinguisher that is 4½ pounds lighter, greatly improved in appearance and design, and produced with greater speed and economy.

This outstanding example of the benefits received when a manufacturer and a supplier collaborate closely is not unique. A pooling of knowledge toward a common end goes on constantly in every industry. Revere suggests, therefore, that no matter what it is you buy, you give your suppliers the opportunity to give you their experience as well as sell you their materials.

REVERE COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801



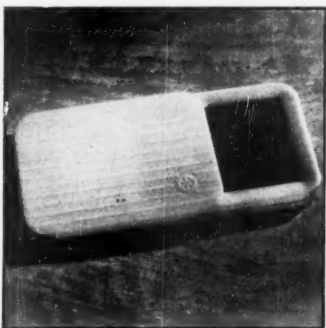
Executive Offices:

230 Park Avenue, New York 17, N. Y.

Pull for such jobs as railroad-track repair, heavy plumbing installation, and power-line erection. The company address is 125 Bayard St., Dayton 1, Ohio.
• Availability: immediate.



Porous metal, plastic case make . . .



... Long-Life Inking Pad

A stamp pad that uses a thin plate of porous metal as a contact surface is said to give 50,000 stampings without re-inking. The ink is stored in a plastic reservoir that is molded with grooves to distribute the ink evenly to the surface of the pad. The grooves keep excessive ink from settling on the pad's surface and drying there.

To reload, you squeeze the contents of a special ink capsule through a small opening in the base of the reservoir. The product is distributed by Davis-Detroit Co., 511 Cass Ave., Detroit 26.
• Availability: immediate.

Concrete Cuber

A new automatic block-forming machine is said to turn out high-strength concrete building blocks with a lot less time and cost.

Concrete from a continuous mixer flows through vibrating conduits to forming molds, where an injection slugger compacts the block. A motor-operated cam then releases the 1,200-lb. slugger, and the block is ejected. Then

more concrete is fed into the form for molding.

A continuous conveyor can be used with the block ejector, to carry the newly formed blocks away for drying.

The new machine is said to turn out 1,200 blocks an hr. Designs are also in progress for another machine which will turn out 3,000 an hr. The manufacturer is Hyde-Miller-Healy Corp., 1215 W. Main St., El Cajon, Calif.

• Availability: two months.

Air Drier

Storage rooms and factory basements can be kept dry with an electric dehumidifier produced by Air Appliances Co. One unit gets rid of a normal amount of moisture in an area of about 4,000 cu. ft. If the room is unusually damp you may have to install a second unit to get a complete drying out.

The dehumidifier sucks in moisture-laden air, sends it through a filter bed of coarse carbon which is saturated with a calcium chloride solution. Then the air passes around a mesh hopper filled with calcium chloride flakes; a motor-driven centrifugal blower forces the air out of the top of the unit. A drip pan takes care of the moisture that has been taken out of the air.

The unit operates on 110 v. The maker's address: P. O. Box 5487, Indianapolis, Ind.

• Availability: immediate.

P. S.

Ball-joint coupling for pipes swivels 20 deg. in any direction without leaking or restricting flow through the pipe. The greater the pressure, the greater the seal, says the manufacturer, Kelite Products, Inc. Address: Box 2917, Terminal Annex, Los Angeles 54, Calif.

Glo-Switch is a wall-type light switch with a tiny neon bulb inside the on-off button. The bulb comes on automatically when lights are turned off, casts a soft light that helps you find the switch in the dark. The maker: Glo-Switch Corp., 30 Church St., New York 7.

Cordomatic Reel winds and unwinds the electric cord of a tank-type vacuum cleaner like a fishing reel. The reel is inclosed in a circular metal housing, will take as much as 20 ft. of cord, fits on at one end of the cleaner. Vacuum Cleaner Corp. of America, Philadelphia, produces it.

Crayon-pencil, Tempilstik, tells the temperature of a metal sheet, ingot, or casting when drawn across the surface of the metal. Calibrations—from 113F to 2,000F in steps of 12.5 deg.—tell point at which the stick melts. There are also Tempil Pellets with a given melting temperature stamped on the face. Tempil Corp. is at 132 W. 22 St., New York 11.

GF Super-File No. 35051
finished in lustrous gray.



The Old Way—of
drawer—draws files—
to provide room to open
the drawer and
get at drawer contents

The Super-File Way
—Files swing out, so
drawer opens, provid-
ing working space, even
when drawer is full

Modernize office filing with **Super-File**
...save space...save time...save money

NOW is the time to get rid of obsolete files. Improved Super-File, with Self-Adjusting Divide-a-Files, cuts office expense four ways. Saves time, simplifies filing work, saves floor space, reduces initial cost of equipment.

The unique feature of Super-File is its Swing Front. When a drawer is opened, the front swings forward, producing a supported angle spread of contents and adding working space. This feature permits 18% more payload per drawer—makes it possible to replace 3 old 4-drawer conventional files with 2 new 5-drawer Super-Files.

New Self-Adjusting Divide-a-Files (three to a drawer) mechanically simplify filing. They break up the drawer load, hold contents slanted to the rear for easy reading and automatically

maintain compression. They self-adjust themselves to changes in volume of drawer contents.

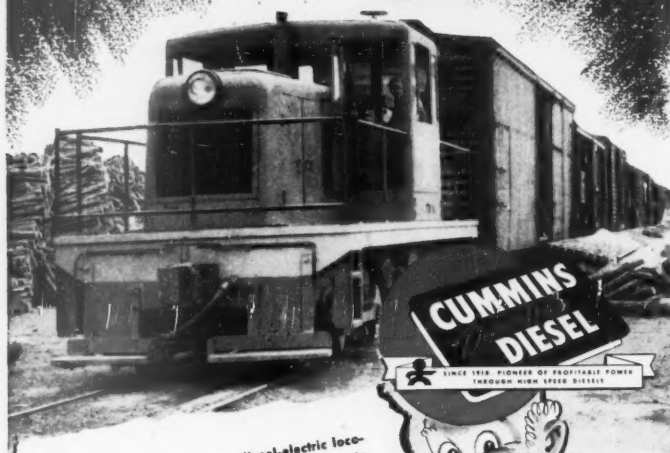
Improved Super-File with Self-Adjusting Divide-a-Files marks a milestone in the filing of office records. It is available in 4- and 5-drawer heights. Write for complete information and the name of our nearest branch or dealer.

**THE GENERAL
FIREPROOFING CO.**
Dept. 17 • Youngstown 1, Ohio

80000000 ALUMINUM CHAINS • METAL DASH • METAL RIGID EXCHANGERS • STEEL SHELVING

CUMMINS

*Cuts Fuel Costs
85%*



In 1948, 58 per cent of the diesel-electric locomotives ordered by industrial users and private rail lines for service in the United States were powered with Cummins Diesels.
(Source: January 8, 1949 Annual Statistical Issue, Railway Age.)



Powered with two Model HBI-600 Cummins Diesel Engines, a 45-ton G-E locomotive replaced a steam locomotive and cut fuel costs 85 per cent in the first six months of operation for Southland Paper Mills, Inc., Herty, Tex.

Southland cost records indicate that the two Cummins Diesels will approach \$8,000 in fuel savings alone in their first year of operation . . . will pay for the locomotive in about three and one-half years.

Cummins Diesels save on fuel and operating costs in any type of automotive, industrial or marine equipment requiring 50 to 550 hp. Write for information about cost-saving Cummins Diesels on your job.

CUMMINS ENGINE COMPANY, INC. . COLUMBUS 4, INDIANA

READERS REPORT:

"Enterprise Island"

Sirs:

How may I obtain a copy of the book entitled "Enterprise Island," which is referred to in *The Trend* [BW—Apr. 9 '49, p.120]?

ROSINA FISCO

BOOZ, ALLEN & HAMILTON,
NEW YORK, N. Y.

• The publisher of "Enterprise Island" is: The Business Bourse, 80 West 40th Street, New York, N. Y. Price: \$3.50.

If every one of the scores of letters we have had asking this information results in an order, "Enterprise Island" may become a best seller.

What Businessmen Can Do To Fight Socialism

Sirs:

Mr. James H. McGraw, Jr.'s editorials on Socialism [BW—Apr. 2 '49, p.68; Mar. 12 '49, p.85] have been his most important yet. Those of us who are gravely disturbed about the kind of a country our sons and grandsons will inherit want him to keep hitting hard in this battle.

The struggle is drawing to such a climax that I believe our future course will be determined in the next four years, through the 1952 elections. The issues are finally becoming clear-cut and simplified—a government controlled and burdened economy vs. a free economy. There can be no half-way existence of socialism; both it and capitalism are too dynamic for that to last. And it's where we're headed in the long-term future that counts; we'll make it all right through this generation. The economic freedoms are lost first, but the others will then go later.

Here's what businessmen must do—as individuals, companies, and associations—to carry through in this with you:

(1) Educate the public in a forceful way in the simple facts of our American system and its incentives. Use the press, radio, movies, television, platform, and the popular magazines.

(2) Inform our legislators of our feelings and desires in a sincere, logical and personal way. They want advice from the well-informed.

(3) Oppose (a) federal spending locally, and (b) subsidy of one's own affairs just as much as when done elsewhere. America was built fastest when each paid his own way.

(4) Encourage our school systems to teach the economic facts of life to those of high school age. Our record with the younger generation is a miserable

crime against their future; most of them know only the New Deal something-for-nothing philosophy.

(5) Show our industrial power in action to those in influential fields: publishing, broadcasting, movies, education and, most important of all, lawmaking. A plant tour makes one realize the source of our greatness and how little government has to do with it.

All our ingenuity and resources must go into this crucial fight. Our future liberties are at stake. Like the tide, a trend is reversible. And we must turn this dangerous trend.

ROBT. M. METCALF, JR.
GUARANTY MORTGAGE & TRUST CO.,
MEMPHIS, TENN.

Kimble of Owens-Illinois

Sirs:

You refer to "Kimble Glass Co., a subsidiary of Libbey-Owens-Ford, Inc." [BW—Mar. 12 '49, p. 52].

It should have been "Kimble Glass Division of Owens-Illinois Glass Co." Kimble Glass Division of our company is producing literally millions of the bulbs which form the face plates of television receiving sets.

The Kimble Glass Division has almost completely mechanized the production of this type of glassware and has increased the output of its Toledo plant to the point where it has been forced to expand into another Owens-Illinois plant at Columbus, Ohio.

Libbey-Owens-Ford, which is not related corporately to Owens-Illinois Glass Co., does not produce television bulbs.

C. P. ADAMSHICK
OWENS-ILLINOIS GLASS CO.,
TOLEDO, OHIO.

Truman's Vote in "Labor States"

Sirs:

Congress and the people are being told that labor gave Mr. Truman a mandate to repeal the Taft-Hartley law. This statement is not merely questionable. It is contrary to fact.

Mr. Truman, outspoken candidate for repeal of Taft-Hartley, was beaten in the 10 big labor states where organized labor is concentrated. More people voted for Mr. Dewey in these states than for Mr. Truman. Mr. Truman got only 73 electoral votes, and Mr. Dewey got 128. Evidence indicates, too, that Mr. Truman's promise to repeal Taft-Hartley may have been the very reason he was beaten on labor's home grounds.

New York is the largest labor state, with 14-million people. Mr. Truman lost it. Pennsylvania comes second, with steel, mining, and clothing industries. Mr. Truman lost that, too.

Michigan is the third labor state. Auto workers and their families alone could give Michigan to Truman. They



we love this kind of an executive

He isn't interested in broad, vague claims. Facts and figures make up his mind. He's easy for us to talk to because our story ties in with *cutting costs* of his packing and shipping, with increasing his production, with stepping up his profits.

We believe *every* user of shipping containers will today, more

than ever before, find our story of interest—to *his* interests!

Write us for details—write *today*.

.....

Our two modern, fully equipped, expertly staffed Designing and Testing Laboratories are available for the improved packing of your products. Get in touch with us with regard to this free service:

General BOX COMPANY

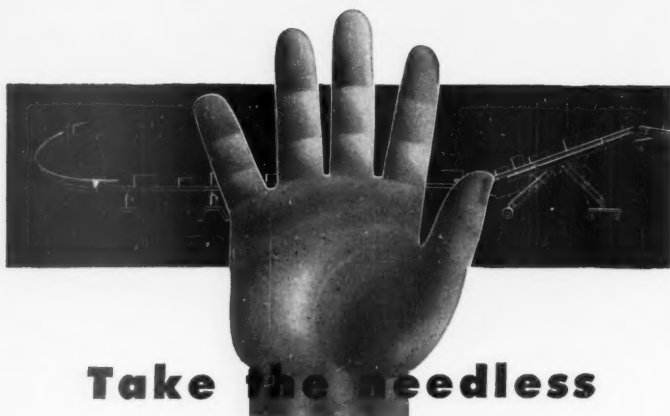
... engineered shipping containers

GENERAL OFFICES: 502 N. Dearborn St., Chicago 10.
DISTRICT OFFICES AND PLANTS: Brooklyn, Cincinnati, Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, New Orleans, Sheboygan, Winchendon, Natchez.
Continental Box Company, Inc.: Houston, Dallas.



Send for your free copy of "THE GENERAL BOX"





**Take the needless
HAND OUT!**

Rapistan

MATERIAL *flow* EQUIPMENT

cuts costs • makes profits • pays for itself



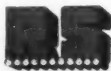
Needless handling eats profits! From receiving to shipping, handling can cost from 2 to 20 times more than it should. Don't use a bucket brigade when you need a fire hose. Cut your costs! Install Rapistan Material Flow equipment. Meets almost any handling need in any business—from a short-length conveyor to speed up truck loading, to a complete multi-floor system. Modest cost. Easily and quickly installed. Adds to profits indefinitely.



for you...PROVED profits

Get your copy of "Rapistan Material Flow at Work". Read these case histories: plant carloading cut 80 to 8 man hours... storage confusion eliminated and loading time reduced 66%... a processor saves \$200 a week... 2 men do the work of 10 with less fatigue. Write on your business letterhead to:

THE RAPIDS-STANDARD COMPANY, INC.
17 Rapistan Building, Grand Rapids 2, Michigan
Representatives in All Principal Cities



CONVEYORS: POWER OR GRAVITY • PORTABLE OR STATIONARY

were told to vote Williams for Governor and Truman for President. Mr. Williams, who had no vote on Taft-Hartley, won by 163,000 votes. Mr. Truman promised repeal of Taft-Hartley and lost Michigan. Michigan also re-elected Republican Sen. Ferguson who voted to pass Taft-Hartley over Mr. Truman's veto.

Finally, in the fourth labor state, Ohio, Mr. Truman squeaked through with a 7,000 lead out of 3-million votes. Mr. Lausche, Democratic candidate for governor, who had no Taft-Hartley vote, beat Mr. Truman by 160,000 votes. Illinois, fifth labor state, gave Mr. Truman a 33,000 majority. It gave the Democratic candidate for governor, Adlai Stevenson, a 575,000 majority. More than half-a-million Illinoisans who wanted a Democratic governor, split their ballots rather than vote for the man who would repeal Taft-Hartley. Nevertheless, Mr. Truman slid in on Mr. Stevenson's coat tails, due to reluctance of a few people to split ballots. Massachusetts, the sixth labor state, went to Mr. Truman. It also re-elected Republican Sen. Saltonstall, who voted to pass T-H over Mr. Truman's veto.

Mr. Truman lost the labor state of New Jersey. He lost Connecticut, too, and Delaware. He won Rhode Island.

Mr. Truman, outspoken candidate for repeal of Taft-Hartley, lost the first, second, third, seventh, eighth, and tenth labor states. He got only 36% of the electoral votes on organized labor's home grounds. Even where he won, he was left far behind by other Democratic candidates. Does this sound like a mandate for repeal of Taft-Hartley?

Let's hope Congress will not mistake the noise of a few labor leaders for the voice of labor.

LESTER E. PERRY

PRESIDENT,
PERRYGRAF CORP.,
MAYWOOD, ILL.

Coal for the Future

Sirs:

We congratulate you on your article, "Coal For The Future" [BW—Apr. 2 '49,p39]. We are sending a bulletin to our members urging them to send for copies.

There is no question but the continued private management of our railroads and coal-mining industries is important to continued U.S.A. prosperity and individual economic independence.

It is true that about 50% of the f.o.b.-mine price of coal, and about 50% of the railroad-gross-revenue dollar today, goes to labor.

However, mechanization is helping solve the labor problem in both railroads and coal, as far as labor cost per dollar production cost is concerned.

The worst problem coal faces today is

How Influential Can a Package Be?



How about the package that carries *your* product to market . . . is it just good enough, or is it good in a very special way? There's a big difference!

HOW INFLUENTIAL CAN A PACKAGE BE?

Lumarith* transparent film has shown manufacturers how to make a *mountain* of sales out of a *molehill* of opportunity . . . to make a staple item *look* and *sell* like a luxury—and at no extra cost. Review your packaging requirements with a Celanese representative. He can put you in touch with box manufacturers or convertors who work with Lumarith transparent film.

Celanese Corporation of America, Plastics Division, Dept. 29-D, 180 Madison Avenue, New York 16, N. Y.

PACKAGING THAT ATTRACTS...
PROTECTS...PERSUADES—THROUGH

Celanese
PLASTICS

*Reg. U.S. Pat. Off.

THE A B C's OF BUSINESS



Adding

Swift, sure Burroughs adding machines are usually among the first acquisitions of a business, however small. They replace "pencil pushing" to speed figuring, reduce errors, provide a printed tape record. Models include hand or electrically operated machines, with or without subtraction, in a variety of totalling capacities.

Accounting

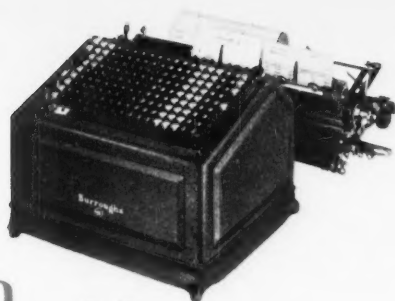
Burroughs accounting machines provide a complete analysis of sales, purchases, disbursements, or other statistical information . . . distributed by department, area or whatever classification is required. This is often accomplished as a by-product of bookkeeping, introducing exceptional simplicity to a highly complex job.



Billing

This Burroughs is the only billing machine that writes and computes a bill or order in one continuous operation. It combines the features of a typewriter, calculator, and adding-subtracting machine. Results of extensions are accumulated automatically to provide a final total or net result, at a touch of the total key.





Bookkeeping

Burroughs bookkeeping machines post ledgers and statements . . . provide neat, accurate, legible records that are always up-to-date. Preference for high-efficiency Burroughs bookkeeping machines is indicated by their wide use in financial, commercial, and industrial concerns throughout the world.



Calculating

Burroughs calculators add, subtract, multiply and divide to accomplish lightning-fast figuring on payroll, invoicing and other computing work. They're easy to learn and easy to use. Burroughs alone builds the "calculator that remembers," with exclusive "memory dials" that eliminate rehandling of figures.

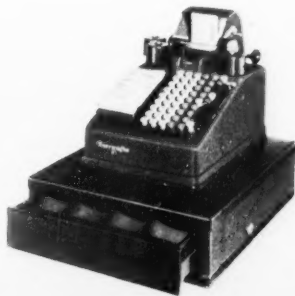
WHEREVER THERE'S BUSINESS THERE'S

Burroughs

Burroughs

Cash registering

Burroughs cash registering and receipting machines serve a wide range of business purposes. The model shown itemizes purchases, prints the amount of tax, shows the number of items purchased with the sales total, and automatically accumulates the total volume of sales with a total count of customers.



The machines illustrated represent a few of the hundreds of models that are produced by Burroughs to meet the needs of every kind of business, every size of business.

The important point is this—Burroughs alone makes business machines to meet *every* figuring, accounting and statistical need; Burroughs alone produces the variety of functions and features to meet specific requirements; Burroughs alone is in a position to make recommendations without partiality towards any one type of machine.

Business depends on Burroughs for the *right* machine to get work done in less time, with less effort, at less cost. For more information, telephone your local Burroughs office.

BURROUGHS ADDING MACHINE COMPANY
DETROIT 32, MICHIGAN

POWER PRESS SAFETY

IS A TOP MANAGEMENT CONSIDERATION



MICROTRIP safety control will reduce the costly toll of power press accidents!



"MICROTRIP" control is the two-hand safety device which makes it impossible to operate the control circuit without touching both buttons at the same time.

Cost of compensation for power press accidents is no small figure in many plants. More than half of such accidents result in permanent disability of press operators!

"MICROTRIP" control is a practical, economical device, easily installed on present equipment, which assures complete safety to the operator in cases where manual press feeding is required.

It does this by the simple expedient of making it impossible to operate the control circuit unless both hands of the operator are out of danger.

The natural, direct motion of the operator's hands away from the danger zone, the light touch actuation, the instant electrical response . . . all increase the speed of press operation and give greater production . . . up to 25% in many cases.

Ask your safety engineer about "MICROTRIP" control. Find out what greater power press safety plus faster press operation can mean to your business. The "MICROTRIP" control is a new product of MICRO SWITCH, whose small precision switches have set standards for dependability and performance in every branch of industry. Branch offices in principal cities.

MICRO...first name in precision switches



inefficient transportation. The great proportion of coal produced in U.S.A. today is transported wholly or partly from mines to destination by rail. Coal still is the largest and the most profitable (net) freight handled by majority of U.S.A. railroads.

Yet "rate barriers" still exist whereby no reasonable rates are published from some origins to some destinations. Much railroad coal-carrying equipment is in poor condition, causing delays in transit plus unnecessary extra unloading costs.

We certainly hope many railroad officials, and the financiers who dictate to them, will see your article and recognize the trend.

If coal can have efficient transportation by rail plus better preparation and utilization equipment the good future your article promises will come sooner.

If railroads will simplify rates and regulations and offer better equipment, facilities and schedules, their prosperity is assured also.

HOMER W. CLARK

SECRETARY,
COAL BY RAIL COMMITTEE,
EAST SYRACUSE, N. Y.

Sirs:

The "Coal for the Future" article is, to my notion, a very good job, excepting that it overlooked what I consider the most important factor of coal for the future. The article might well have embodied in Section 5, under the heading of "Competition," the subject of labor.

We are definitely at the present moment in a buyers' market and competition is going to be tough from here on in. The papers are carrying big articles about the pending dispute between John L. and the coal operators. Consumers of large quantities of coal are starting to give considerable thought to stockpiling or looking for substitute fuels.

Even the big coal-hauling railroads are turning to diesel locomotives. This, I think, can be charged to the uncertainty of the flow of coal from its source because of the disturbances to it by the labor shutdown.

Until the coal industry can be assured of a constant flow of coal, without interruption for any cause unless it is a natural one—so the sales department can go out and furnish to its customers a surety bond that they can keep supplying without interruption—the coal industry is going to keep going down and down and down.

The industry can spend millions of dollars in modernizing both underground and on top to turn out cheaper and better products, but what good is this going to do if the men won't work because John L. or someone else tells them not to?

There has never been a mine shutdown, regardless of its duration, that has



To make a gas mask FOR A RAILROAD CAR...

When you fumigate a railroad car, windows, ventilators and other openings permit gas to leak out. This slows up the job...makes it less effective and far more costly.

But smart railroad men have learned that you can seal those leaks—quickly, effectively and economically—with Permacel Masking Tape. The fumigating gas remains inside until the job is done...then the tape can be removed in a jiffy.

This is merely one of the thousands of ways that Permacel Masking Tape is used in industry. Have you ever thought about it for your business? Our staff of trained technicians will be glad to help you discover ways of cutting time and costs with Permacel Tapes. "PERMACEL" REG. U. S. PATENT OFF.

Permacel

INDUSTRIAL TAPES

INDUSTRIAL TAPE CORPORATION • NEW BRUNSWICK, N. J.

Before five?
That's easy...with
Hammermill Bond!



"Yes! It's easy to finish my work on time. If I make one little mistake, I don't have to retype the whole letter... because Hammermill Bond takes quick, clean erasures."

Your typists also will turn out faster, neater work on the firm, snow-white surface of improved Hammermill Bond. Try it. You'll agree that this paper makes any typing done on it stand out with new sparkle and clearness.

Send for samples of improved Hammermill Bond

The coupon below will bring you samples of improved Hammermill Bond in white and fourteen pleasing, easily identified colors. We'll include, if you wish, a copy of "Your Next Letterhead," the Hammermill idea-book, which you'll find useful in improving or redesigning your present letterhead.

**HAMMERMILL
BOND**



For the name of a member of the Hammermill Guild of Printers, call Western Union by number and ask for "Operator 25."

Hammermill Paper Company, 1455 East Lake Road, Erie, Pennsylvania

Please send me—FREE—a sample packet of Hammermill Bond sheets and a sample book. (Check if you'd like a copy of ☐ "Your Next Letterhead" and sample books of ☐ Hammermill Mimeo-Bond ☐ Hammermill Duplicator.)

Name _____

Position _____

(Please attach to, or write on, your business letterhead)

GW-4-30



LOOK FOR THE WATERMARK

IT IS HAMMERMILL'S WORD OF HONOR TO THE PUBLIC

Send this
coupon
now!

not finally been settled. It would seem to me that some mechanisms could be set up by law to force these settlements before the delays happen, because I doubt that there has ever been, excepting in war time, a sizable user of coal who has gone to substitute fuels because of the shutting off of his supply of coal, that has ever gone back to coal again.

B. E. SCHONTHAL

B. E. SCHONTHAL & CO., INC.,
CHICAGO, ILL.

Miners' Productive Time

Sirs:

In your article on "Lewis' Strategy" [BW—Mar.26'49,p115] we note that productive time at the mines is shown as seven and one-half hours.

The average mine has only about six and one-half hours of productive time. The men are underground eight hours, of which one-half hour is a lunch period, and about half an hour is used in traveling from the drift to the working face, and another half-hour returning from the working face to the drift at the end of the shift.

WM. MATSON TOBIN

IMPERIAL COAL SALES CO.,
DETROIT, MICH.

Sellers' Market for Bread

Sirs:

In a recent Marketing Brief [BW—Feb.12'49,p42], you say:

"Baking capacity has not increased since the war though population and incomes have, so the Dept. of Agriculture sees a sellers' market in bread for some time to come."

What is the particular publication of the Dept. of Agriculture wherein this theme is developed?

LYOYD R. WOLFE

GLENCOE, ILL.

•The name of the publication is "Farm-to-Retail Margins for White Flour and White Bread."

Birth of Turbosuperchargers

Sirs:

The turbosupercharger item [BW—Feb.26'49,p52] errs in referring to turbosuperchargers as "war-developed" units.

Actually, the present turbosupercharger was perfected prior to World War II and was in use on many aircraft when the war began. Research on turbosuperchargers dates back more than 40 years ago, and working models have been in use since World War I.

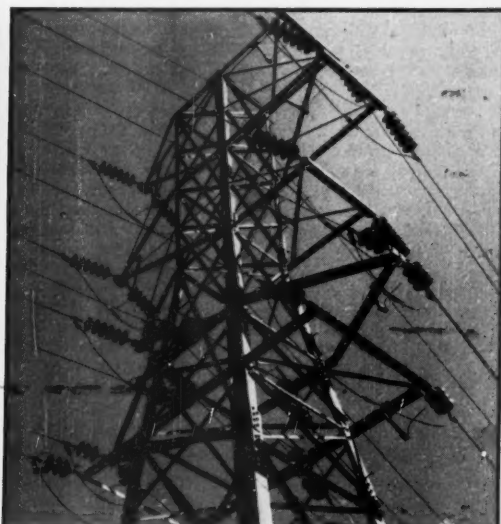
The turbosuperchargers used on the Stratocruiser were designed, developed, and supplied by General Electric.

JAMES M. MCGARRY

GENERAL ELECTRIC CO.,
SCHENECTADY, N. Y.



ATOMIC ENERGY 1949



From Bombs Toward Power

With new bomb capacity coming in this year, emphasis swings toward a power plant program for 1953.

This country's atomic energy program is now in good shape.

That encouraging conclusion can be drawn from an examination BUSINESS WEEK has just completed of the \$3-billion industry which grew out of the wartime work on the atom bomb.

For the third time in as many years we have taken a fresh look at the whole operation; we have visited all the major atomic-energy plants; we have talked to top-level and working-level officials of the Atomic Energy Commission; we have consulted industrialists who are in or close to atomic work. No one gave us any secret information—but we have found that you don't need secret information to get a pretty clear idea of how the work is shaping up.

• **Breakdown**—After the war, the atomic-energy project pretty well fell apart. BUSINESS WEEK's first two reports (BW—Mar. 8 '47, p. 21; Apr. 10 '48, p. 47) reflected this breakdown. But only in recent months has the public generally begun to realize what had shape the project was once in. The technical and managerial teams broke up. Many of the

wartime contractors pulled out. Many of the hastily-built wartime plants showed signs of physical breakdown. Technical progress nearly stopped.

The need for fundamental political decisions contributed still further to technical stagnation: Should we go on making atom bombs? What kind of agency should do the work? Who should head the agency? From 1945 until well into 1947, the scientific and engineering work had to wait for answers to questions like these.

• **Recovery**—A year ago, BUSINESS WEEK reported that the program seemed to have passed its low point. We saw signs of efforts to correct the weaknesses, and to get the program back on the track. Now, that effort is paying off.

• **Bombs**—The weapons job is under control:

Production is rolling smoothly; and it looks like a fair assumption that the supply of fissionable material will begin to increase by the end of this year.

The bomb itself is somewhat more effective.

The appalling technical obstacles that

still loomed in the way of production improvement a year ago have now been reduced to tricky but clearly soluble engineering jobs. In the area of production, by and large, top management is no longer preoccupied with figuring out what ought to be done. It can now tackle such normal managerial problems as how to reduce costs, how to speed lagging operations, how to keep the whole thing in balance.

• **Power**—For industry at least, this is almost equally important: With the weapon-production operation squared away, AEC is finally turning attention to the problems of power development. A year ago, the bright postwar hopes for industrial power from atomic fission were receding further into the background every day, submerged under AEC's intense concentration on immediate military needs.

Now the hopes are coming back. Power is getting attention. AEC has decided to start building several different types of atomic engines. Today they are still in the laboratories and on the drafting boards; but by the end of this year, at least two of them will be under construction.

• **Schedule**—By about 1953, the atom engineers expect to have the answers to

most of the key questions on power. If all goes as they hope, they will have demonstrated that useful power can be produced by splitting uranium. They will know whether they can count on a plentiful supply of atomic fuel. And they should have the figures from which some reasonable estimates of eventual power costs can be calculated.

Then, sometime in the second half of the fifties, a power plant should go into operation—a plant on a commercial scale and, possibly, with commercial costs. At that point the atom will be in business.

If the cost facts turn out favorably, that means that atomic power will have real economic significance throughout the sixties; that some—perhaps most—of the new power plants installed during that decade will be atomic.

• **Shakeup**—Like most new organizations, AEC has had to go through several reorganizations of structure and personnel to arrive at a workable setup. Roughly, the evolution has been this:

The commission first took over the highly centralized structure of the Manhattan District; it was inadequate to the load and bogged down badly.

So, in 1947, AEC adopted a pattern which was supposed to be regional. It didn't make too much sense in theory, but it had the effect of giving almost

complete autonomy to the working installations in the field. AEC was able to assemble a very able group of field managers, and they pulled the operation out of the doldrums.

During the past year, the commission has almost completely shaken up its topside personnel. And it has just completed a structural reorganization designed to get the strings of control back into Washington. To do this, AEC had to strengthen the administratively weak Office of the General Manager.

Carroll Wilson continues in this post, but he got strong back-up when Carleton Shugg was brought in from Hanford to be Deputy General Manager. Several of the AEC divisions, which had been simply staff policy units, have been brought into the line of command, and now operate the field installations for the general manager. One particularly important change:

A new Division of Reactor Development has absorbed the old Division of Engineering. It has direct charge of the Argonne National Laboratory, the Knolls Atomic Power Laboratory, a new Pocatello (Idaho) reactor proving ground, and all research contracts involving reactors. Lawrence Hafstad has been brought over from the Defense Establishment's Research & Development Board to head it.

piles themselves were deteriorating seriously; there was real doubt whether they could continue to operate much longer. The chemical plant was inefficient for long-term operations. It extracted only a portion of the available plutonium; and it left a dangerous and bulky residue which had to be carefully stockpiled.

(2) The other, and bigger, problem was to build what amounts to a complete new plutonium plant at Hanford—both to increase production and as a safeguard in case the wartime plant went to pieces.

• **Solution**—The first problem has been substantially licked. The Hanford technical people have found out the things that were causing the piles to deteriorate. And they have found ways to eliminate nearly all of them. The piles are operating at full rate, and it's now hoped that they can continue to run more or less indefinitely. In addition, changes have been made in the chemical plant which have substantially increased the amount of plutonium recovered.

The New Plant

The real problem that has been absorbing attention all over the AEC organization is the design and building of a new plutonium plant at Hanford—a tremendous operation, on the same scale as the Manhattan Project jobs of building the original Hanford and Oak Ridge plants.

• **Chemistry**—It's only within the last couple of months that AEC has been able to consider itself out of the woods on this project. The difficulty has been in the chemical plant. When G.E. first undertook the design of the plant, it made good progress on the atomic piles themselves, but it bogged down

1. For Bombs: More Plutonium

The Atomic Energy Commission manufactures two kinds of atomic explosive—uranium 235 and plutonium. The processes are entirely different; in effect, they are the products of two separate industries.

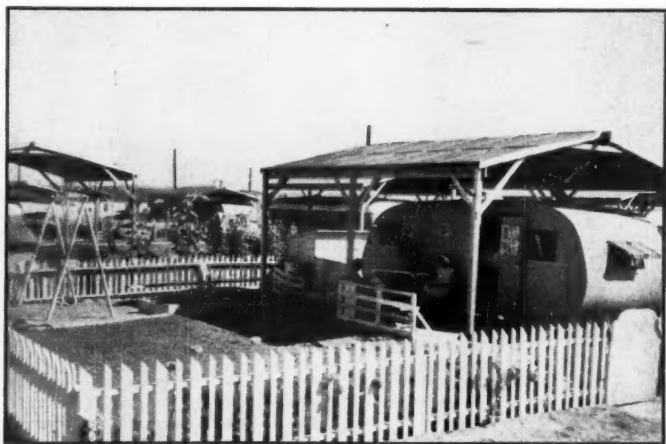
• **Plutonium**—Production of plutonium starts with bars of uranium metal, refined from Congo or Canadian ore. Most of this metal is heavy uranium (U-238); but about one in every 140 atoms is light, fissionable uranium (U-235). The bars are loaded into one of the three atomic piles at the Hanford (Wash.) plant, and are left there for several weeks. In the pile, many of the U-235 atoms split, producing: (1) a couple of lighter (and intensely radioactive) atoms; (2) a lot of energy; and (3) two and a fraction neutrons, on the average. Some of these neutrons are absorbed into atoms of U-238; these atoms then go through a series of transformations and end up as atoms of plutonium 239. This is an artificial fissionable element which does not occur in nature.

The uranium rods are then removed from the pile, dissolved in acid, and passed through an elaborate chemical plant, also at Hanford, where the plutonium is extracted. The leftover mess of uranium, made up of working chemicals and dangerously radioactive fission

products, is stored in underground tanks.

• **Problems**—When General Electric took over the Hanford plant from du Pont in the fall of 1946, the plutonium-production program involved two major problems:

(1) The most urgent was to rehabilitate the existing plant at Hanford. The



CONSTRUCTION WORKERS at Hanford are housed in barracks if they're single, in government trailer camps like this if they're married—and have a trailer

on the chemical design—largely because it was burdened with the operation and rehabilitation of the existing plant at the same time that it was setting up a complete new engineering unit to work on the new one. There's some feeling, too, among atom people, that G.E. officials may have underestimated the difficulty of the job.

Early last year, more people were set to work developing a satisfactory process—AEC's Argonne and Oak Ridge laboratories, Blaw-Knox, Esso's Standard Development Co. They, too, found it tough going. But a month or so ago, the chemists finally came up with a process which AEC considers promising and has approved for further work. Kellogg Corp. is now working on the engineering design of a plant to use the process.

This, of course, doesn't mean that the whole problem is licked. But much more complete extraction of plutonium is expected, and perhaps some recovery of the unused uranium.

• **Uranium Economics**—Although the process adopted is capable of completely splitting up the slugs from the pile into their different elements, AEC hasn't yet decided just how far it's worth while carrying the process. It may be some years before a final decision is reached. This, like many other open questions in the program, hangs on decisions about what might be called the economics of uranium.

What is the relative value of U-235 and of plutonium? If breeding (production of more than a pound of plutonium by fission of a pound of U-235) is technically possible, how far is it worth while to carry it, in the light of costs of natural uranium? Future reactors will use fuels with a higher-than-normal proportion of fissionable material; how much fissionable material is it worth while investing in enrichment of reactor fuel for maximum output of bombs and, eventually, power? Is there any worthwhile use for radioactive fission wastes? (Some of the military people have been arguing that these might be usable as a weapon in the form of radioactive dusts.)

Du Pont is now working on a study of questions like these for AEC.

• **Time Scale**—The serious problems on chemical treatment at Hanford seem to be licked now. But the long time-lag has thrown the construction of the whole new plutonium plant out of synchronization, and will delay its completion. On the original schedule, construction of the chemical works was supposed to start early this year; now it will be late 1949 before the engineers have the blueprints ready.

In consequence, it has been necessary to slow the work on the new reactors. These are, basically, improved versions of the three existing reactors—low-tem-

perature carbon piles, water-cooled and fueled with natural uranium. Their construction has stayed on schedule until now. One of them is due to go into service next fall; the second will be a standby. One of these two can be put into limited production even before the new chemical plant is built, by using extra capacity resulting from rehabilitation of the old chemical plant.

However, work has been deferred on a third reactor originally scheduled to come into service shortly after the first two. As a result, the construction work force is now being cut back. By last September it had risen in one year to a total of 16,000 men. It is now down to about 13,000, will soon drop to some 9,000, will rise again in the fall.

Precision and Size

Secrecy has kept even the construction industry from realizing it, but one of the most remarkable construction jobs in history is now going on at Hanford. Costing about a half-billion dollars, the new plutonium plant is probably the biggest building operation ever undertaken in peacetime.

Unlike the big construction jobs of the thirties, this is not primarily a matter of moving lots of dirt, pouring lots of concrete. This project involves precision work of a sort that would ordinarily be thought of as a toolmaker's job rather than a construction man's. Yet, surprisingly, it has proved possible to do the work with construction crews.

• **Welding**—For example, one 40-ft. section of the job is crammed with equipment which has to be welded into place—with tolerances in the 10-thousandths of an inch. To make it harder, the tolerances are critical both before and after welding. It was necessary to

call in metallurgists to develop welding techniques to do this. But the actual welding was done by men from the contractor's regular crews.

All the welders on the job were put through a series of tests. The best of them were selected for special training and then assigned to this tricky job. These men were not set up as a separate craft; they drew regular welder's pay, benefited in prestige and experience.

• **Analogy**—One way in which this huge construction job can be described without getting into secret facts is this: It's somewhat like building a cross between a wartime powder plant, a synthetic-rubber plant, and a utility system. In some phases it rather resembles the mounting of the Mt. Palomar telescope—handling ton masses to laboratory precision.

• **Contractors**—The greater part of the construction, which may reach \$350-million worth, is being handled under contract with G.E. by a joint firm: Guy F. Atkinson Co. & J. A. Jones Construction Co. This combination was originally set up to do Navy work on Okinawa; it is also handling some construction in Greece.

The subcontracts Atkinson-Jones has placed give another clue to the type of work involved in the job. Some 35%-40% of the entire job is included in a plumbing, heating, and ventilating subcontract placed with Urban, Smythe & Warren. Another 15%-20% is accounted for by an electrical subcontract held by Newberry-Neon Electric Co.

Morrison-Knudsen has a separate contract with G.E., running into the tens of millions, for rehabilitation of the railway line into Hanford, and for construction of additional waste-storage tanks.

2. Uranium 235 Again

One of the more surprising developments of the past year has been a marked increase in interest in production of the fissionable isotope, uranium 235, by separating it from the plentiful isotope, uranium 238. This is the operation performed by the gaseous-diffusion and electromagnetic plants at Oak Ridge.

A year ago, though the isotope-separation plants were in considerably better shape than Hanford, they looked to AEC like a blind alley. The point: Separation plants are expensive; their mechanical complications mount up faster than the chemical complications of plutonium plants. Also, they throw away a tremendous volume of useless uranium, irrevocably stripped of its fissionable elements; the plutonium process offers at least the promise that, through breeding, all of this uranium

could eventually be made fissionable. Finally, future plutonium reactors will probably provide a byproduct dividend of power; Hanford, for instance, next year will be throwing away something on the order of several million kilowatts of power which more advanced reactors could put to use.

• **Standing Pat**—So a year ago, AEC wasn't very excited about isotope separation. The electromagnetic plant had been shut down. (This is a rather low-output batch process, in which uranium atoms are electrically charged and shot through a strong magnetic field; the lighter isotope is deflected more by the magnet; thus it can be collected separately.)

The gaseous-diffusion plant (diagram, page 71) was kept running, and some studies were made of possible expansion; but there was no inclination to

push the expansion with any vigor.

- **Expansion**—The change in viewpoint seems to have come after the Eniwetok Proving Ground tests last summer of the late-model atomic bombs. This may perhaps indicate that these tests led to the conclusion that uranium 235 has a role to play which cannot entirely be filled by plutonium.

At any rate, within the last few months AEC has set up a three-way program to expand production of U-235. It involves these steps:

- (1) An additional unit has been authorized, to be put in series with the gaseous-diffusion plant at Oak Ridge. This will operate on the same principle as the existing plant; but it will be designed for a higher flow-through of uranium hexafluoride, and for only a moderate separation of the isotopes. It will be used to pretreat the feedstock for the existing plant.

This new plant, to cost about \$70-million, will both raise the purity of the U-235 from the existing plant and also increase the output. For example, if the new plant could furnish the existing one with a feedstock containing one part in 70 of U-235 instead of the natural one part in 140, that would, in effect, double the capacity of the existing plant.

- (2) In the works, though not yet formally approved, is a complete new diffusion plant to parallel the existing plant and provide additional capacity. This unit is undoubtedly some years away, and it's not entirely certain that it will ever be built.

- (3) A new electromagnetic process is being worked out. The huge magnetic machines ("calutrons") used in the present process each use a lot of electricity and manpower, and each has a very low output. Reason: It is very nearly impossible to produce a beam of ionized uranium which will have a lot of uranium in it, and which can also be "focused" accurately enough so that the U-238 and the U-235 come out at the right places. That makes the process expensive, and that's the major reason it was shut down.

During the shutdown, the process has been considerably improved. Today, it's probably no more expensive than diffusion was during the war; but it's still not economic in today's terms.

Lately, however, Carbide & Carbon—which operates the Oak Ridge plants—has begun work on a completely different and very promising electromagnetic process. If it works out as hoped, the calutrons can be rebuilt and put back to work.

Bombs and Psychology

At Los Alamos, the New Mexico mesa-top where the bombs themselves are actually assembled, there has been

little physical improvement of the working plant in the past year, but a tremendous improvement in town living conditions. This is not so frivolous as it might seem. The big postwar problem at Los Alamos concerned psychology rather than plant.

- **Morale**—Back in 1947, morale at the bomb center was almost completely shot. The big names had left after the war. The technical people who remained had little confidence in themselves, felt themselves isolated at an uncomfortable and probably temporary post. AEC's big job was to rehabilitate the place psychologically.

Rebuilding the town was one of the major steps in that direction. Once the most scrabbly of the atom towns, Los Alamos is now the only one with real charm and character.

- **Buildup**—A conscious effort has been made to rebuild the pride of the permanent staff in their laboratory; this included encouragement of a good deal of fundamental science alongside the bomb-development work.

AEC hasn't tried to bring a lot of the wartime big names back onto the staff; feeling is that it probably couldn't be done, and that anyway these men belong in the universities bringing up a new generation of scientists. The permanent staff is deliberately built around younger men who haven't yet established their reputations—partly for the very reason that they are working in fields they can't publish anything about. But men like Fermi, Bethe, Teller, and Gamow are coming in constantly on a consulting or temporary basis—some for a few months in the summer, some for periods as long as a year.

- **Better Bombs**—The Eniwetok Proving Ground bomb tests contributed still further to the self-confidence of the

staff—for two reasons: (1) The tests were conducted by the laboratory staff in a thoroughly workmanlike fashion; and (2) apparently, they indicated that postwar Los Alamos research had been successful in stepping up the efficiency of explosion of the bombs.

This month it was revealed for the first time that Los Alamos is investigating energy-producing reactions among the light elements. Conceivably this could lead to radically new and more powerful weapons. There has been considerable discussion in the last year or two of the possibility that a superbomb might utilize the explosive combination of atoms of hydrogen into atoms of helium—the nuclear reaction from which the sun gets its energy.

As a result of all these things, the laboratory now has an effective atmosphere; most of the staff people find it a good and stimulating place to work. Size of the staff has been built up from a postwar low of 1,500 to about 1,800; it will soon level off at some 2,000 people.

- **Capacity**—No expansion of the laboratory and bomb-manufacturing facilities at Los Alamos is planned. Some increase in capacity has been achieved by moving manufacture of components into various contractors' plants around the country. If additional assembly capacity is eventually needed, it will doubtless be installed someplace other than Los Alamos; even though the bomb work is already spread among many locations, the mesa top is still too concentrated a strategic target.

But preliminary work has already started on a program of rebuilding and moving the technical area. Over the next five years, permanent buildings will be built on a neighboring mesa. This will cost some \$100-million.

3. How Many Bombs?

As a munitions industry, clearly, the atomic-energy program is now rolling very smoothly. The obvious weaknesses have been corrected. The major problems have been solved, in principle at least. Judging from the plans for increased production of fissionable material, production of bombs may be increasing. And it looks as if, by 1950 or 1951, it could be practically doubled.

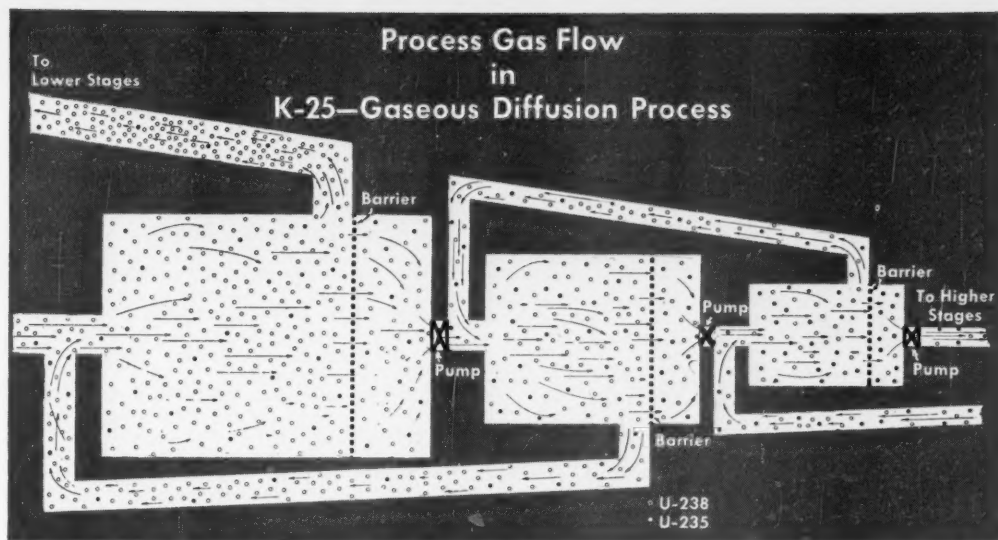
- **What Results?**—That, of course, is not a concrete answer to the question of what the U. S. is getting for the \$750-million it is sinking into the atom program every year. One way of approaching an answer is this:

The general scheduling of the project strongly suggests that, at the moment, AEC has sufficient manufacturing capacity to process all the uranium that it can lay its hands on. Presumably, as new capacity comes in, AEC will have

to arrange for additional supplies of uranium ore from Canada and the Congo. Part of this difficulty is met, however, by the fact that the new facilities—and rehabilitation of the older facilities—will permit much more complete utilization of existing ore supplies.

- **Figures Needed**—That much information is useful so far as evaluating the effectiveness of the AEC's work is concerned. But it's not much help to the citizen, congressman, or public official who wants to weigh the atom bomb as a factor in foreign policy, as an element in a rounded military program.

Recently, Chairman McMahon of the congressional Joint Committee on Atomic Energy—like some of the military people—has been arguing that intelligent legislation is impossible unless the government releases figures on bomb production, as it does on other muni-



This is how uranium 235 is separated from uranium 238 at Oak Ridge. Hot uranium hexafluoride, a gas, is put on one side of a membrane with many tiny holes. In any gas, all molecules have the same energy.

Since molecules containing U-235 are a little lighter, they have to move a little faster to get the same energy. So they have a little more chance of hitting one of the holes and passing through the membrane. Of course

they'd also have more chance of getting back, but a pump whisks them to the next stage. There it goes through the same process, is a little further enriched. After hundreds of stages, the gas is almost all U-235.

tions. Idea is that such information would be of no great value to a potential enemy; that, in fact, definite figures on a constantly growing stockpile might have a more sobering effect on the Russians than the vague menace of a secret weapon.

For no very obvious reason, President Truman has ruled against McMahon, and production is still a secret from all but a few top officials.

Anyone, however, can get a rough idea of the order of magnitude of bomb production from careful reading of the Smyth report. The report strongly hints that the Hanford plant produces not much less than 2 lb. of plutonium per day.

The Hanford plant cost only a little less than the Oak Ridge diffusion plant (\$350-million against \$500-million), yet AEC thought it advisable to concentrate its first expansion on Hanford-type plants; this would indicate that production from the diffusion plant is not much larger than that from Hanford. Similarly, the fact that it seemed worthwhile to keep the diffusion plant going suggests that its output is not a great deal less.

Werner Heisenberg, the German physicist who led Hitler's atom project, estimates that it takes about 30 lb. of fissionable material to make a bomb. If his guess is somewhere near accurate, this reasoning would indicate that, since

July, 1945, we have been producing bombs at a rate on the order of 50 a year—maybe half that, maybe twice that. The evolution of military thinking over the past two or three years is not inconsistent with some such production rate.

The Competition

If one big mystery for the U.S. citizen is how his own country is doing on atom bombs, the other is how the Russians are doing.

• **The Russians**—Very little seems to be known about Russian progress. Because their best ore sources are in Czechoslovakia, where there's much coming and going, we have some information about Russian mining work—but beyond that, almost nothing.

Russian security practices, of course, are pretty effective on almost everything. But we seem to have been guilty also of some rather inept intelligence work. Until recently, AEC people had only very limited access to Central Intelligence Agency reports, and CIA was getting no help from the atomic people on figuring out what to look for. Lately, AEC has set up an intelligence division, headed by Dr. Walter F. Colby. Colby gets to see the CIA reports.

It's reasonably certain the Russians have not actually made a bomb. If they had, they would have had to explode it—just to be sure that they had.

And the chances are that the upper-atmosphere monitoring maintained by the Bureau of Standards and the Air Force would detect the resulting radioactivity.

• **Skepticism**—Lacking information, few atom people are inclined to think the Russians have made much progress. People who were saying in 1945 that it would take the Soviets five years from then to make a bomb, today tend to put the time at five years from now.

This optimism is based partly on the recurring reports of technical troubles in Russian industry. Partly it results from growing realization of how much freak luck there was in our own wartime accomplishment.

Example: Back in the early thirties, du Pont decided to follow the unusual practice of concentrating the engineering work of its multitudinous units into a single division. In the late thirties, this engineering division expanded under the influx of war orders from Europe. It grew still further under our own immense effort to create a munitions industry. Then, late in 1942, a great many of the du Pont war assignments were completed nearly simultaneously, freeing the organization.

Cohesive engineering organizations aren't built quickly; so it's likely that never in history, before or since, has anyone had available a well-knit team of the size, experience, and caliber of

the du Pont group that built Hanford.

- **Easy Way**—One thing does worry the atom people: the possibility that the Russians may find, or stumble onto, some much easier way of doing the whole job.

The wobbly state of physical theory today contributes to this uneasiness. So far as physicists can tell, almost anything can be true. Today the science of subatomic physics swarms with particles and forces that have no satisfactory relation to each other, each invented to explain some particular set of facts. As one theoretician puts it: "If someone told me he had discovered a new particle with peculiar properties, I'd have no way of telling whether his

story was even plausible; there would be nothing to do but repeat his experiment."

That's one reason why AEC feels it necessary to sink a lot of effort and money into theoretical research which has no very immediate connection with uranium fission. It's why, for instance, AEC is furnishing \$9-million to the Berkeley Radiation Laboratory to build a 6-billion-electron-volt cyclotron.

So far as anyone knows, the machine has nothing much to do with atom bombs. Nevertheless, if we didn't build one, someone else might. And they just might make a discovery leading to a new weapon—or be in a position to blackmail us by saying they had.

4. And Now—Reactors

One of the prices we have had to pay to get the bomb-production program into its present free-rolling condition is neglect of the other side of the atom program—improvement of atomic reactors.

For the moment, at least, this country actually lags behind foreign work. England's BEPO reactor at Harwell, and Canada's heavy-water reactor at Chalk River, are both considered more advanced than anything now operating in this country.

But now AEC has finally turned its attention to reactors. And for the next several years, the significant atomic-energy developments can be expected to come in this field.

- **Fundamentals**—As long as he's thinking in terms of bomb work, the non-technical businessman who wants to keep in touch with atomic energy can afford to ignore the insides of a reactor. He can think of it simply as the furnace in which uranium is smelted into plutonium.

But anyone who wants to make sense out of AEC's reactor program, to follow the progress toward atomic power over the next few years, needs to know something about reactor characteristics.

- **Natural Uranium**—As it comes from the ore, uranium is a uniform mixture of two kinds of atoms—140 parts of heavy uranium (U-238) and one part of light uranium (U-235). Both kinds will absorb neutrons that hit them and will become unstable, but after that they behave differently.

U-238 reorganizes itself by changing the neutron, and another one of its own neutrons, into protons. This transmutes the U-238 into a new chemical element, plutonium.

U-235, on the other hand, is unable to stabilize itself. So it explodes into two pieces, which fly apart with tremendous velocity. They bump around among the surrounding material and heat it up. This is how the energy

of fission shows up. The two flying pieces are the "fission products."

These fission products are in very unstable form. Over a period of time—some almost instantaneously, some over thousands of years—they stabilize themselves by spitting out energy waves and pieces of themselves. This is the radioactivity of the fission products.

One of the things the fission products spit out very promptly is neutrons; the number varies, but on the average each fission results in two and a fraction neutrons. And that's the crux of the whole process, for these neutrons can cause new fissions and keep the process going in a self-sustaining chain reaction. That is, they can if the neutrons happen to hit an atom of U-235. What are the chances that one will?

- **Probabilities**—Several different things can happen to the neutrons produced by a fission. Some of them will be absorbed by any foreign materials that happen to be around, or will escape through the sides of the chunk of uranium and leave the process altogether. But most will be absorbed either by atoms of U-238 or U-235. Only the latter will keep the reaction going.

Unfortunately there are 140 times as many atoms of U-238 as of U-235. So the chance that one of the two and a fraction neutrons will hit U-235 is minute. It looks impossible. In fact it is impossible to create a chain reaction in a large chunk of natural uranium.

The Carbon Pile

There are two ways around the difficulty. One is to get rid of the U-238. You can use "enriched" fuel, which is either pure U-235 or has a higher than normal proportion of U-235. This is what's done in the bomb, in a couple of existing reactors, and in many reactors now planned.

- **Slow Neutrons**—A second method is to make use of the effect of different

neutron speeds. Fast neutrons, as they come from the fission, are not easily absorbed by anything; they go by too fast, in a sense. However, each kind of atom has certain "resonance" speeds at which it particularly likes to absorb neutrons. It happens that U-238 is resonant with neutrons at certain medium speeds and has little tendency to absorb slow neutrons—while U-235 particularly likes slow neutrons. So if you could slow the neutrons down you'd increase the chance of their hitting U-235.

The way to slow a neutron is to bounce it around on some light material which won't absorb it. Such materials include beryllium, heavy hydrogen, and carbon. These are called "moderators."

- **Uranium Lattice**—In a carbon pile it works like this: The natural uranium is concentrated in small chunks a few inches across. Then the chunks are embedded in a block of graphite, spaced—judging from statements in the Smyth report—about 18 in. apart. When a fission occurs in one of the uranium chunks, the high-speed neutrons almost always escape from the chunk before they hit anything. They bump around in the carbon; and by the time they reach another uranium chunk they are moving slowly and are preferentially absorbed by U-235. By this method, it generally works out that, despite the tiny minority of U-235 atoms, at least one of the neutrons emitted in each fission will hit another atom of U-235—provided all other losses are kept to a minimum.

This last proviso means, for one thing, that foreign neutron-absorbing material must be kept out of the structure of the reactor as much as possible. It also raises the question of neutrons lost to the outside world through the surface of the reactor. That depends on how much surface area there is:

- **Critical Size**—A cube 1 ft. on a side has 6 sq.ft. of surface per cubic foot of material. A 2-ft. cube contains 8 cu.ft., and has 24 sq.ft. of surface—or 3 sq.ft. of surface per cubic foot of material. That is, the larger the reactor, the less surface area it has, proportionately. Since the number of neutrons produced depends on the amount of material, the percentage lost through the sides will go down as the reactor gets bigger.

For any particular type of reactor, there will be a certain size at which surface losses will be just low enough to let the reaction run. This is called the critical mass of the reactor.

Reactor Characteristics

On these principles, it is possible to build a natural-uranium reactor in which each fission will cause one and

a small fraction other fissions. This quantity is called the . . .

Multiplication factor, or "K" of the reactor. With K greater than one, the reaction will increase rapidly. When it reaches the desired level, a "control rod" of some neutron-absorbing material like cadmium or boron is inserted into the pile so far that it soaks up just enough neutrons to reduce K to one. Then the reaction will continue at a constant rate.

How long will a reactor keep running? Without attention, not very long. Quite soon you run into one of the basic problems of reactor operations:

Poisoning. An essential in reactor design is to keep neutron-absorbing foreign substances out of it. But every time an atom fissions, it introduces foreign material into the setup—the fission products. Some of these are avid neutron absorbers. After a reactor has run a comparatively short time, enough fission products will pile up to halt the reaction, to poison it. Then you have to pull out the uranium slugs and run them through a chemical plant to extract the fission products.

Continuation of the reaction will also, of course, run into the question of fuel exhaustion. But this has peculiarities, too, involving the matter of . . .

Breeding. As the reaction proceeds, fewer and fewer U-235 atoms are left to continue the chain. They must be replaced. Offhand, it would seem that every time you burned a pound of U-235 (producing 10-million kwh. of energy) you would have to put in 140 lb. of natural uranium in order to get another pound of U-235. However, there's another factor working. Some of the neutrons are being absorbed by U-238. Every time that happens you gain an atom of plutonium—which is just as good as U-235 for carrying on the reaction.

This process reduces the amount of replacement necessary. Clearly, if a pound of plutonium were created every time a pound of U-235 was burned, all the U-238 would be usable fuel. So you would only have to put in a pound of natural uranium for replacement. At something like \$50-\$100 a pound for metallic uranium, that would mean fuel was free, for all practical purposes. Indeed, if you made more plutonium than you burned U-235, you could skim some off for bombs—and get a byproduct income.

Theoretically, all this is possible, though no present reactor does it. From each fission, you have two and a fraction neutrons available. One of them is needed to keep the chain reaction going. To breed, one or more of the remainder must be absorbed by U-238.

That's a matter of holding down the losses from other sources—particularly losses by absorption into the structural

materials and mechanisms of the reactor. That calls for careful design, but most technicians now believe it also gets you into the question of . . .

Neutron velocity. To make a natural-uranium reactor run, you have to slow down the neutrons to keep the U-238 from choking off the reaction. But if you use fuel enriched in U-235 or plutonium, you can work directly with the fast neutrons. This makes your initial charge of fuel very expensive, of course. But fast neutrons are not absorbed by the structural materials so readily as slow neutrons are. So you have more neutrons left over for breeding. Fuel enrichment has further effect on the . . .

Size of reactor. A fast-neutron reactor using enriched fuel can be very much smaller than a natural-uranium reactor. It eliminates the bulky moderator, and also most of the U-238. The difference is fantastic. The working parts of one of the enriched-fuel reactors at Los Alamos are only about a foot in diameter. This small size has obvious advantages—but also, as will be seen, some disadvantages.

With the question of size you are getting close to the practical problems of power generation. In these terms, the key fact about a reactor is its . . .

Power, or flux. These two terms are not quite synonymous. Flux has a technical definition built around the idea of neutron density, but it can be thought of as the number of fissions occurring per second per unit volume—or, correspondingly, the rate of energy

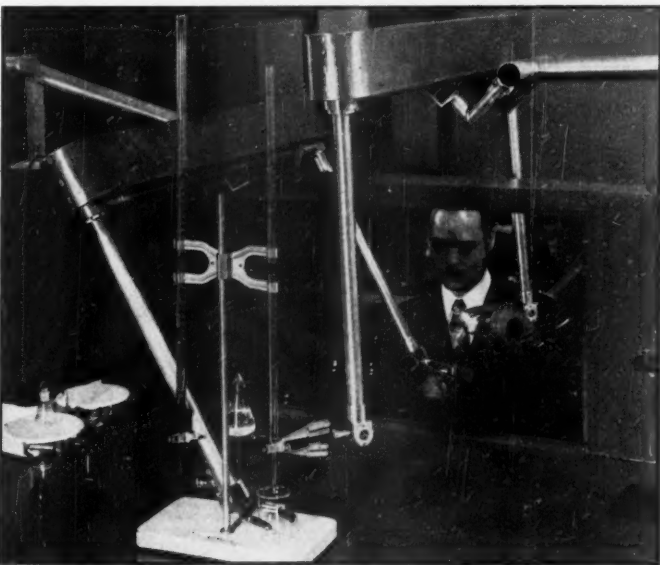
production per unit volume. So the total power output of a reactor will depend on the flux and on the size. A powerful reactor must either be very large or have a very high flux or both.

Perhaps the most peculiar single feature of atomic reactors is this: Any reactor that will run at all will reach as high a flux as you wish; simply pull out the controls and the reaction will keep increasing until something melts. It's as if any automobile engine would give you an indefinite amount of power as you opened the throttle, right up to the point where the gears began to strip. So the practical limit on how much power a particular reactor will produce is simply the amount of power you can carry away; and that's a question of . . .

Heat exchange. The cooling system of a high-powered reactor is what determines the power. Atomic energy appears as heat. Some fluid—water, air, helium, liquid metal—must be passed through the reactor to get the heat out. Then the hot coolant can be put to work generating steam or in any other convenient fashion.

The amount of heat energy you can handle will depend on: how fast the coolant fluid moves; the amount of heat-transfer surface available inside the reactor (that's where small size can be a disadvantage—no room for your pipes); and on the . . .

Reactor temperature. As in the case of power, any reactor will go to any temperature the materials can stand; theoretically up to millions of degrees;



REMOTE CONTROL gadgeteering gets a big impetus from need to work with radioactive substances. With this apparatus, Argonne Laboratory scientists can perform chemical experiments from behind lead or concrete shields

the problem is to run enough fluid through the uranium to keep the reactor cool.

When you're interested in power you have a double incentive to run your reactors at very high temperatures.

5. AEC's Reactor Program

Obviously, variations of all these fundamental characteristics suggest hundreds of different types of reactors. AEC's problem is to pick a few types of reactors to build. AEC has picked four.

• **Materials Tester**—One difficult problem today in design of high-energy reactors is lack of knowledge of how structural materials will behave under terrific neutron pounding. So one early project is to build the simplest possible high-flux reactor in which to test materials for other reactors.

The materials tester is being designed at Oak Ridge and the Argonne, will be built in Idaho. It will operate at a flux very much greater than the Hanford piles. So, even though it's not very large, it will develop a great deal of energy. However, in the interests of simplicity, it will be run cool. Cooling water will be passed through it at high pressure and terrific velocity in order to get rid of the energy without letting the temperature rise.

Also for simplicity, it will run on slow neutrons; so it will use a moderator, possibly beryllium oxide. However, it will use enriched fuels in order to get a very high K value; this will make it possible to load a lot of material into the test pockets without choking off the chain reaction.

The materials tester will be started this year, will be finished in 1951 or 1952. It will cost about \$20-million.

• **Breeder**—The economics of atomic power will largely depend on whether breeding is possible. So one of the new reactors will be primarily an attempt to breed—to produce plutonium faster than the U-235 is consumed. The most promising way to do this seems to be to use fast neutrons; they are less easily absorbed in the structural materials, so neutron losses are at a minimum. That calls for use of very-much-enriched fuel, and no moderator.

Since breeding will have only limited value unless you can do it in a hot power-pile, the breeder will be allowed to run up to high temperatures comparable with modern steam plants. That pretty much rules out water as a coolant; any reactor is tricky enough without having to use high-pressure steam pipes. So the reactor will be cooled with liquid metal with a very high boiling point—most probably sodium, alloyed with potassium to lower its melting point.

Thermodynamically, any heat engine is more efficient at high temperatures. But also, in a reactor, the only way to increase the heat energy passed through the limited transfer surface available is to go to higher temperatures.

Sodium has good thermal properties and not much neutron absorption. It does become radioactive, but the radioactivity has a short life. Metal has another cute advantage: It can be pumped electrically—by simply running it through a spiral pipe and letting the liquid itself be the rotor of an electric motor.

The hot metal from the reactor will be passed through a heat exchanger to generate steam which will make electricity. However, the cooling system won't have the capacity to handle very much power.

The Argonne laboratory has had this machine on the drafting board for several years. Construction will start this year, will take until 1951, will cost only \$3-million or so.

• **Submarine Engine**—One of the strongest pressures for atomic power is coming from the military people; they want to use it to drive submarines and airplanes. They like the promise of almost infinite range without refueling. So one of AEC's high-priority projects is now a power-reactor to drive ships.

The requirements are that the machine develop a lot of power in a small space and weight. Also, it must operate for months without chemical cleansing; that means it must have a very high K, initially, so that it can keep operating despite a lot of poisoning. All that implies enriched fuel, perhaps combined with a moderator, plus extremely high temperatures, perhaps 2,000F.

This job is still in a preliminary stage. Argonne is working out the nuclear characteristics. Later, Westinghouse will do the actual engineering, perhaps start construction in 1950 or 1951, complete the job in 1953 or 1954. It is expected to cost some \$30-million.

• **Power Plant**—At Schenectady, General Electric is nearly ready to start construction of a pilot version of an atomic central-station power plant. This, it is hoped, will combine breeding with generation of substantial quantities of power. It will use enriched fuel plus a small amount of moderator to keep the neutrons in an intermediate speed range.

This speed range has several purposes. It will explore an unexplored part of the spectrum, for one thing. And the G.E. engineers figure it will provide more bulk (to give room for heat transfer) than a fast neutron reactor—while at the same time they hope that, by ducking around among the absorption-resonant

neutron velocities, they can get good breeding characteristics.

The unit will be metal-cooled like the Argonne breeder, will operate at temperatures somewhat below those of a high-pressure steam plant. Completion is expected around 1952; cost will run to about \$18-million.

• **Airplane Engine**—The Air Force's controversial NEPA (Nuclear Energy for Propulsion of Aircraft) project is still enmeshed in interservice and military-AEC disagreements.

The basic problem is rather similar to the naval engine, except for the greater importance of light weight and, presumably, the novel heat-exchange problems involved in using a reactor as the heating element of a jet engine. So AEC opinion runs to the view that NEPA ought to wait until a number of basic problems have been tackled.

• **Progress**—Fairchild Engine & Aircraft Co. has been studying the problem for the Air Force for several years. Last summer its NEPA people felt that they were ready to design an actual engine which, with its shielding, could be handled by existing large aircraft.

At that time, AEC commissioned an M.I.T. group to review the NEPA work. The resulting "Lexington Report" recommended that studies be continued, but that no attempt be made to build anything now. Meanwhile, the NEPA people themselves have revised upward their ideas on the size of aircraft needed to carry a shielded reactor; and they are beginning to think in terms of unmanned craft with unshielded engines.

Interservice disputes enter into the situation, too. The Lexington Report argued that it would be reasonable to push vigorously ahead with an airplane engine only if such a device seemed to be of immense strategic value. The Air Force considers it second only to the atom bomb itself; an atomic engine offers a way out of the impasse between (1) supersonic jet bombers with no range and (2) long-range propeller bombers of low speed. However, the Joint Chiefs of Staff are unwilling to commit themselves to anything stronger than a statement that an atom airplane would be desirable.

REPRINTS AVAILABLE

Single copies of this Report to Executives are available without charge to subscribers, to nonsubscribers for 20¢. Quantity prices will be quoted on orders of 11 or more. Address orders to Readers Service Department, Business Week, 330 West 42nd St., New York 18, N. Y.

The Stevens • Chicago



*...another
famous hotel
under
Hilton
operation*



The largest hotel in the world is the friendly Stevens, overlooking beautiful Lake Michigan. Its superb facilities, conveniences and services are truly in keeping with high Hilton standards. The Mid-West's greatest Ice Show is featured regularly in the popular Boulevard Room.

Use our new Inter-Hotel Reservation Service or teletype your nearest Hilton Hotel



C. N. HILTON, PRESIDENT

EXECUTIVE OFFICE • THE STEVENS • CHICAGO 5, ILLINOIS

In Chicago
THE STEVENS and
THE PALMER HOUSE
In New York
THE PLAZA and THE ROOSEVELT
In Washington, D. C.
THE MAYFLOWER
In Los Angeles
THE TOWN HOUSE
In Dayton, Ohio
THE DAYTON BILTMORE
In El Paso, Lubbock, Texas
THE HILTON HOTEL
In Albuquerque, New Mexico
THE HILTON HOTEL
In Chihuahua, Old Mexico
THE PALACIO HILTON
In Bermuda
THE BERMUDIANA
THE CASTLE HARBOUR
THE ST. GEORGE
In San Juan, Puerto Rico
THE CARIBE HILTON
(Opening late in 1949)

Extra Protection

AGAINST
HIGH MOTOR
COSTS



3 Great Protective Features!

- Heavy cast iron frame protects top, bottom, sides, ends. Resists corrosion, distortion, physical abuse.
- Ball bearings pre-lubricated at factory. Need no attention for years. Protected against inadequate maintenance.
- Multiple-dipped and multiple-baked stator plus inter-phase insulation protect against electrical breakdown.

GET FULL DETAILS on the extra-protective features of *Safety-Circle* motors. Ask your A-C Authorized Dealer or Sales Office or write for Bulletin 51B6210. Sizes 1 to 20 hp. A 2706

ALLIS-CHALMERS, 901A SO. 70 ST.
MILWAUKEE, WIS.

ALLIS-CHALMERS

Safety-Circle, Texrope, and Vari-Pitch
are Allis-Chalmers trademarks.



Sold...Applied...Served...

by Allis-Chalmers Authorized Dealers, Certified Service Shops and District Offices throughout the country.



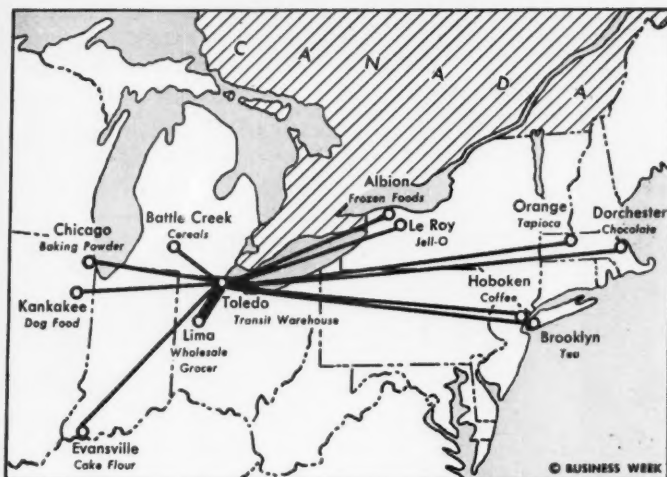
MOTORS— $\frac{1}{2}$ to 25,000 HP and up. Matching Allis-Chalmers Control.

TEXROPE—Belts in all sizes and sections, standard and Vari-Pitch sheaves, speed changers.



PUMPS—Integral motor and coupled types. Sizes and ratings to 2500 GPM.

MARKETING



ALL ROADS ON General Foods' distribution map lead to Toledo. There warehouse is...

G.F.'s New Marketing Hub

Central warehouse in Toledo now receives General Foods products from its scattered plants, reships to wholesalers. This means cheaper, faster service to meet stiffer competition.

A General Foods customer—say a wholesale grocer in Lima, Ohio—used to get his food shipments from a lot of places dotted over the map. Some of them came from the company's various factories; others went to Fort Wayne or Detroit, were broken up there and reshipped to the buyers.

● **Change of Address**—For the past year, however, Ohio wholesalers have noted a difference: All their General Foods shipments seem to come from Toledo.

General Foods hadn't meant to let the public in on the explanation until its plans were fully developed. But last week, after enough of the scheme had leaked out to pique marketers' curiosity, the company broke down and talked about it.

● **Transit Warehouse**—What has happened is that General Foods has set up its first "transit warehouse" in Toledo. G.F. builds a wholesaler's order from that warehouse, loads it onto a freight car, and ships it out.

The warehouse plan, says Charles G. Mortimer, Jr., G. F. vice-president in charge of marketing, is just one tactic to meet a new competition—the competition for space on the grocer's shelf. The average grocery store is getting bigger. But there's less room percentage-wise for any one brand of dry groceries.

There are almost twice as many varieties, sizes, brands, and flavors as there were prewar. And drugs, cosmetics, home permanents, and other nonfood items have invaded the store.

General Foods doesn't expect the warehouse plan to solve the whole problem. The company is attacking on other fronts, through promotion, advertising, packaging, and research. But it hopes that its warehouse system will bind the wholesale grocer—and in turn, the retailer—to General Foods, for the essence of the system is to give better service for less money.

● **Comparison**—Let's take our wholesale grocer in Lima again and see how he fares under the old and new systems. Suppose that he is ordering three General Foods products, Maxwell House coffee, Jell-O, and Post cereals. One carload of each will last him, say, 40 days.

● **The Old Order**—If he's a large wholesaler, he'll go ahead and order a carload of each—in order to get a carload discount. Each carload will come to him from a different place—the coffee from Hoboken, N. J., the Jell-O from Le Roy, N. Y., and the cereals from Battle Creek, Mich. That means three separate cars arriving at different times. It also means three invoices. Worse

yet, it means tying up a considerable amount of his capital in merchandise.

• **And the New**—Under the new plan, the Hoboken, Le Roy, and Battle Creek plants will ship carload lots of their products to the General Foods transit warehouse in Toledo. Now when our grocer orders, he needn't ask for a carload of each product in order to get the carload discount. Instead, he can order one-third of a car each of coffee, Jell-O, and cereals; the warehouse makes up a car containing his order, ships it—at carload discount—to his private siding.

One invoice covers the whole deal. And the wholesaler has tied up only about a third of the capital he would have laid out for the three carloads under the old system. Besides, since he knows his shipment is coming from nearby Toledo instead of far-away Hoboken, he can find out what routing it will take. Thus, he figures the transit time more closely.

• **Small Dealers' Benefits**—For the small wholesale grocer, the transit warehouse is an even greater boon. It used to be that he couldn't afford to buy a whole car of coffee. So he had to get together with a couple of other small wholesalers and arrange for a "pool car." The G. F. discount on pool cars is greater than on L.C.I. shipments, but not so large as that for a carload (since pool cars usually have to be shunted around to all members of the pool).

Pool buying, obviously, has its drawbacks. Say three wholesalers are in on the deal. They may not all run out of coffee at the same time. And setting up the details of a pool car—who gets how much and whose siding it goes to first—takes time and trouble. Sometimes the car doesn't go to the wholesaler's siding at all. Instead it goes to a "break-bulk point" where it's opened. Then the wholesaler has to pick up the goods from that point.

The transit warehouse plan saves the small wholesaler a lot of the fuss. Instead of getting together with other wholesalers to buy one-third of a carload of coffee, he can now order that amount along with smaller amounts of all the other General Foods products he may want. And the whole order comes to his private siding at one time from one point on one invoice.

• **Transit Centers**—The Toledo warehouse operates in parts of Ohio, Indiana, Michigan, Pennsylvania, Kentucky, and as far south as Georgia and Alabama.

General Foods isn't saying where it plans to put the rest of its transit warehouses. Picking a good spot calls for some nice calculations of freight rates from the plants to the warehouse—and from the warehouse to the biggest bulk of G. F.'s customers. It's fairly certain, however, that G. F. will put one warehouse in Harrisburg, Pa., and one in

Here's a greater market for FOOD
than these 30 cities combined!



Get your
share of the
MIDWEST
Farm
DOLLAR

Amazing market fact! Farmers in the Midwest 8 states buy more of 16 packaged foods than do all the families in the 30 biggest cities in these same states! Here's dramatic proof of the importance of this rich market—a market that can be sold all in one piece with the five locally-edited papers of the Midwest Farm Paper Unit. Investigate without delay! Your dealers prefer to have the products they sell advertised in these locally potent papers.

Midwest offices at: 250 Park Ave., New York
• 59 East Madison Street, Chicago • 542 New
Center Building, Detroit • Russ Building, San
Francisco • 645 So. Flower Street, Los Angeles

Packaged Food Buying

FARMS VS 30 BIGGEST CITIES
IN EIGHT MIDWEST STATES

	MONTHLY EXPENDITURE PER FARM FAMILY	MONTHLY EXPENDITURE PER CITY FAMILY	MONTHLY EXPENDITURE FARMS 1,308,000 FARM FAMILIES	MONTHLY EXPENDITURE CITIES 2,566,353 CITY FAMILIES
Packaged food				
1. Family Flour	\$1.096	\$0.214	\$1,502,197	\$441,750
2. Pancake Flour	0.082	0.041	112,391	84,634
3. Specialty Flour	0.040	0.014	54,825	28,900
4. Cacao	0.057	0.035	78,125	72,249
5. Chocolate Syrup	0.046	0.024	63,048	49,542
6. Syrup	0.581	0.142	796,329	293,124
7. Malasses & Sorghum	0.058	0.015	79,496	30,964
8. Cake Trimmings, Frostings	0.014	0.007	19,189	14,450
9. Baking Powder	0.040	0.014	54,825	28,900
10. Baking Soda	0.016	0.009	21,950	18,578
11. Yeast	0.092	0.009	126,097	18,578
12. Corn Starch	0.019	0.008	26,042	16,514
13. Pections	0.029	0.013	39,748	26,835
14. Rice	0.054	0.035	74,013	72,249
15. Cereals, To-Be-Cooked	0.234	0.105	320,725	216,747
16. Cereals, Ready-To-Serve	0.724	0.357	992,327	736,938

Note: In bulk foods the same farm buying leadership applies to frozen fruit, canned milk, and honey.

Sources: Red and Green Dollar Food Study, Midwest Farm Paper Unit, Inc. 1940 Census. Free copy on request.

MIDWEST
Farm Paper UNIT

PRATT FARMER • THE FARMER •
WALLACE FARMER & TOWN
HOMESTEAD • WISCONSIN
SOUTHWEST FARMER
NEBRASKA FARMER

How much does it cost you

...you can cut costs with

MECHANIZED

Put MECHANIZED SELLING to work on the first three steps to a sale, at a cost you count in pennies. The results will pay off in dollars earned in more sales as well as dollars saved in sales costs!

The low cost, high speed tools of advertising enable MECHANIZED SELLING to free

your salesman from vital but time-consuming selling jobs. It makes contacts, arouses interest, creates favorable regard for your product. A tireless assistant to your salesman, MECHANIZED SELLING helps him concentrate his selling skill on the pay-off steps—the steps that get the order!

That's MECHANIZED SELLING at work!

Have you read "ORDERS AND HOW THEY GROW " This fast reading 24 page booklet discusses Mechanized Selling and its helpfulness to the man who sells. We'll be glad to send you a copy. We know you will find it of interest.

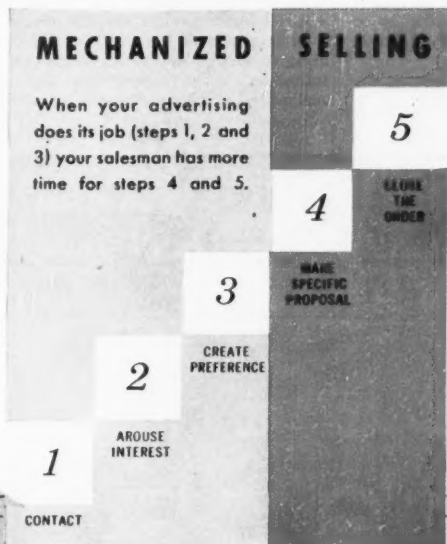


McGRAW-HILL PUBLICATIONS

330 WEST 42nd STREET, NEW YORK 18, N. Y.

to make one sales call?

SELLING!



SURPRISINGLY few companies actually know how much it costs to put a salesman across the desk from a prospect. Costs vary, of course, but authentic surveys show they range from \$5.00 to \$30.00 per personal call. That's why the time of a skilled salesman is so valuable to him and to you. He must use his costly time to the best possible advantage, and you can help him by clearing away preliminary selling chores.



ONLY 2¢ A DAY...

Frigidaire

Water Coolers operate for as little as that!



Yes, it costs as little as 2¢ a day for current to operate this Meter-Miser-powered Frigidaire Water Cooler—just 2¢ a day to cool all the drinking water you'll want. And wait till you see the new low prices on these thrifty Water Coolers!

Only Frigidaire Water Coolers are powered by the Meter-Miser—the simplest cold-making mechanism ever built, whisper-quiet and wonderfully efficient. Meter-Miser performance has been proved in the hottest climates—and in millions of Frigidaire products. It's backed by a special 5-Year Warranty.

Your dependable Frigidaire Dealer will be glad to give you full information about the many sizes and types of Frigidaire Water Coolers. Find his name in the Classified Phone Book, under "Water Coolers" or "Refrigeration Equipment". Or write Frigidaire Division of General Motors, Dayton 1, O. (In Canada, Leaside 12, Ont.)

FRIGIDAIRE

Water Coolers



New Jersey, somewhere near New York City. Eventually, General Foods will probably handle all its distribution through transit warehouses.

• **Stronger Tie**—From the wholesaler's angle, the system makes it easier to get G. F. foods. From G. F.'s angle, that means—G. F. hopes—that the wholesaler won't ever run out of G. F. products. Every move toward better service (and lower costs), the company feels, makes the wholesaler more anxious to buy—and sell—General Foods.

ONE-WAY BOTTLES PAY OFF

Disposable quart-size beer bottles are proving their merchandising value in California.

Among the out-of-state brewers, Schlitz historically has been the leader, followed by Pabst and Budweiser. Pabst has led Budweiser by an average of 250,000 gal. a month.

But around the first of the year, Budweiser adopted the one-way quart bottle. In three months since the change, Budweiser has outsold Pabst by about 100,000 gal. (There's no extra charge for the disposable bottle—and, of course, there's no 5¢ deposit to pay.)

Last month, Pabst began moving disposable quarts into California.

A Matter of Age

Whisky in used barrels doesn't age, Internal Revenue says now. Reversal of month-old ruling hits small distillers hard.

The Bureau of Internal Revenue is just an "Indian giver" in the books of a lot of small whisky distillers. On Apr. 7, the bureau handed out a new ruling that they liked. Now it has rescinded it.

• **New Rule**—Longstanding bureau regulations had kept distillers from claiming age for liquor that they stored in used barrels. The new regulation, which covered whisky produced between Aug. 1, 1944, and Oct. 31, 1946, changed that. If distillers transferred liquor into new barrels—and kept it there for at least six months—they could claim age for the combined used- and new-cooperage periods. If the whisky stayed in new cooperage for 24 months, distillers could call it "straight" whisky.

• **Barrel Shortage**—The decision meant a lot to small, old-line distillers and to at least one big newcomer (Publicker Industries). When these distillers started making whisky after the war, charred



Where "57 Varieties" Got Their Start

A lot of old companies can whip out sketches to show you the building where they started. But H. J. Heinz Co. can go them one better. Heinz celebrates its 80th birthday this year—and its birthplace still stands in good shape. In the kitchen of this

house, Henry John Heinz, in 1869, cooked and bottled his first food product, horseradish. Today, after three generations, the house is a landmark among the modern factories on the site of the company's international headquarters at Pittsburgh, Pa.

white-oak barrels were tough to get. The large distillers had bought up control of the whisky-cooperage companies, had pretty well tied up the supply. So the small distillers were forced to store their output in barrels that had been used before. And until the bureau changed its regulation Apr. 7, they couldn't claim that this whisky had been aged at all.

But under the Apr. 7 rule (now revoked), whisky laid down, say, in July, 1945, could have been sold as four-year old whisky this coming July—if it had been transferred to new cooperage before Jan. 1, 1949. If it had been moved into new barrels before July 1, 1947, it could have gone on the market as "four-year old straight whisky." Thus, many small distillers would have had aged goods on hand to compete with the larger companies when aged whisky becomes plentiful after midyear (BW—Mar. 26 '49, p. 80).

• **Dollar Gain**—Actually, almost all the distilling companies—large and small—have some stocks of whisky that have been aged, at least partially, in reused cooperage. For most large distillers, this whisky is only a small part of total inventories. But for many smaller whisky makers, used barrels hold a big chunk of their stocks.

The Apr. 7 rule would have meant real money for these smaller distillers. Four-year-old whisky, aged in new barrels, has had a price tag of about \$7.75 a gal. That's roughly what four-year-old goods, aged half the time in new cooperage, half in old, would have sold for. As two-year-old whisky (when only the time in new cooperage counts as age), it would bring about \$4.75 a gal.

• **Cause for Change**—Internal Revenue's official reason for axing the ruling was to give the matter "further study." Talk in the liquor trade is that pressure from some of the larger distilling interests had a lot to do with the decision that "further study" is needed.

The big distillers, the trade says, were particularly irked by the bureau's statement that its analyses showed "there is no discernible difference between whisky which has been aged for a given period, the first part of the period being spent in reused cooperage and the latter part in new, and whisky which has been aged for a like period in a new charred barrel from the beginning."

Some were annoyed, too, by the bureau's statement that "other agencies of the government interested in preventing monopolistic trends or in affording all possible protection to the smaller and less powerful industry units have also urged this office to take any action possible to afford the necessary relief."

It took the bureau about two years to come to the decision it has just rescinded. The small distillers are wondering how much more time it will take for "further study."

*fast... economical... convenient
point-of-use record copying!*



the New

record DEXIGRAPH

Now you can easily photocopy business records right where they are used—and do it faster, simpler and in a wider range of sizes than ever before.

You can roll the new Record DEXIGRAPH on casters from one department to another—wherever your records are located. It plugs into any standard electrical outlet. No plumbing or special wiring is required. Developing is an independent operation.

You can copy records up to 9" x 14" at same size or at any of five reductions. Records as large as 14" x 17" can be copied at smaller sizes for easier handling and filing.

You can make up to 300 exposures an hour. No previous experience is necessary. Positive adjustments and an automatic timer make it simple to operate the DEXIGRAPH. Every copy is completely accurate, proofreading is eliminated. Paper pre-cut to standard sizes saves print costs.



• To find out exactly what the Record DEXIGRAPH can do for you, write now for your free copy of this new illustrated booklet. Photo Records Division, Room 235, Remington Rand Inc., 315 Fourth Avenue, New York 10, N. Y.

Remington Rand

FOR GREATER BUSINESS EFFICIENCY—USE PHOTOGRAPHY

NATIONAL PACKAGING EXPOSITION

PACKAGING • PACKING • SHIPPING



Presenting all significant developments in packaging, packing, shipping—the machines, materials and services that are keys to superior merchandising, higher quality, lower cost. Also, authoritative discussions of latest techniques that are solving knottiest problems in these fields. For hotel reservations, write Housing Bureau, Packaging Exposition, Central Pier, Atlantic City.

MAY 10 TO 13 • ATLANTIC CITY

Keep Your **DUST** Out of the Air
and Your **PROFITS** in the Bag—
with a **MIKRO-COLLECTOR**



The new **MIKRO-COLLECTOR**® is truly a triumph in the art of dust collection. For, it is radically different from any other system of its type. The revolutionary principles employed insure optimum dust recovery and sensational filter rates. With its perpetually clean filter of hard pressed wool felt, the **MIKRO-COLLECTOR** has proved its ability to handle highly concentrated dust loads. It performs with equal efficiency as an auxiliary to any type of grinding machinery, or in general air clarification.

Let our engineers study your dust control problems. Research laboratory and test facilities available, no charge or obligation.

*Patents applied for by H. J. Hershey, Jr.,
and Pulverizing Machinery Company.
PULVERIZING MACHINERY COMPANY
37 Chatham Road Summit, N. J.

MIKRO-COLLECTOR

By the makers of
MIKRO-PULVERIZERS and MIKRO-ATOMIZERS

PRESERVE OUR HERITAGE, FAITH, FREEDOM & INCENTIVE

Airlines Spar for Market

CAB has just about knocked the nonskeds out of the flying. Now regular lines do some fancy bidding against each other. Main techniques: low-fare coaches, special "excursion" package trips.

The Civil Aeronautics Board's death-knell ruling against nonscheduled air carriers last week (BW—Apr. 23 '49, p20) was sweet music to the nation's certificated airlines. Requiring the nonskeds to have a certificate of convenience and necessity will just about knock the props from under the independents' \$45-million-a-year business.

• **Battle Ahead**—But if they were clated over the impending removal of their independent competitors, they were too busy to show it. They still had the big battle: competition with each other.

Basic competitive tactics: Special trips and low excursion rates to lure the tourist trade in off seasons; speed and plain comfort for the businessman market; low coach fares minus luxury as against regular higher rates with a "red carpet" treatment.

• **Skycoach Payoff**—Capital Airlines, originator of skycoach fares, kicked-off its 1949 sales program by adding more skycoach rate flights. To the service between New York and Chicago, they added flights between New York and the Twin Cities Minneapolis-St. Paul and between Washington and Chicago (BW—Jan. 15 '49, p38). The four-cents-a-mile fares on these runs represent a 35% reduction from first-class rail rates and regular air fares.

Capital's results should prove a powerful persuader to any airlines that are doubting Thomases on skycoach rates. J. H. Carmichael, Capital president, came out with the first report on his company's skycoach operations last week. A brother industry might have called them colossal. In the 12 months before the day the coach rates went in (Nov. 4, 1948), Capital carried a total of 1,083 "through" passengers between Chicago and New York. In the next five, it carried more than 20,000.

• **American Airlines**—Starting May 15, American Airlines will make a four-pronged bid for the air-travel market between the U. S. and Mexico:

(1) A 60-day round-trip excursion fare—featuring reductions of as much as 25%—from New York, Philadelphia, Boston, Chicago, St. Louis, and other cities east and north of Dallas.

(2) A \$150, 30-day round-trip excursion fare from Los Angeles to Mexico City;

(3) Extension of American's family-fare rates to Mexico. (Husband pays full fare; wife and children go at half rates if they fly Mondays, Tuesdays, and Wednesdays);

(4) A 20% discount on adult one-way fares for groups of ten or more students traveling together from the same U. S. port.

• **Mother and Child**—For the first time in its history, American will court the women's market with its red-carpet treatment. Women with children will get the works—diaper service, bottle-warming, and the like. R. E. Deichler, vice-president in charge of sales, says the approach has a double purpose: Women have a lot to say about whether or not their husbands fly.

• **Trans World**—Trans World Airline has been operating tourist-rate service between Kansas City and Los Angeles since Feb. 7. Now it's awaiting CAB approval on its application to start similar flights between New York and Kansas City on May 1. Rates will probably be the same four-cents-a-mile now prevailing on the K. C.-L. A. flight (\$59.50 air coach fare as against \$91.40 regular fare).

• **East Coast Competition**—Eastern Air Lines and National Airlines are slugging it out for the East Coast markets.

Eastern is plugging its \$180 round-trip Caribbean tour offered in conjunction with Pan American World Airways. The pitch: Fly from any one of a number of eastern cities to Miami—on to San Juan and return via New York. For an extra \$18, passengers can take side trips to Havana, Haiti, the Dominican Republic, or Jamaica. Tickets are good for 90 days with stop-over privileges anywhere along the route.

National Airlines will meet Eastern's lure with "House Party Air Tours" from New York to Miami. Prices on these tours start at \$157.37 for a 7-day junket; range up to \$187.87 for 13 days. (Fare, plus tax, includes air transportation, hotel reservation, motorcoach tours, suppers, and other entertainment.) In addition, National will run a \$249.37 Miami Beach and Havana combination tour.

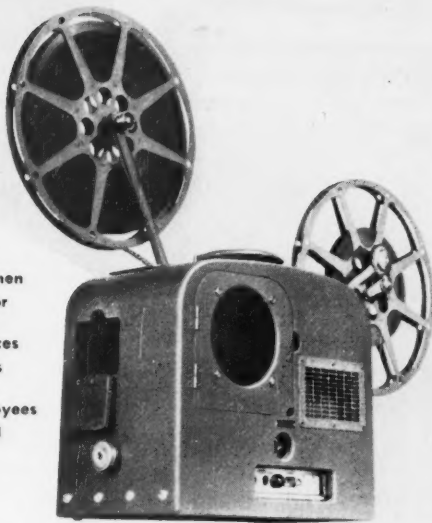
• **Record Year**—For both the nonskeds and the regulars, 1948 was the biggest year yet, Air Transport Assn. reports.

For the nonskeds, volume was double that of 1947.

All U. S. certificated airlines—domestic and international trunklines and feeders—flew a record 963.3-million revenue ton miles last year. In 1947, they flew 926.5-million. Total operating revenues climbed from \$570-million in 1947 to an estimated \$648.5-million—thanks in part to fare boosts.

NEW ONE-CASE FILMOSOUND

Easy to carry and operate anywhere. Higher undistorted sound output than any other lightweight projector. Built-in 6-inch speaker can be removed from case and placed near screen. Larger speakers available. With 6-inch speaker, an outstanding value at . . . **\$449**



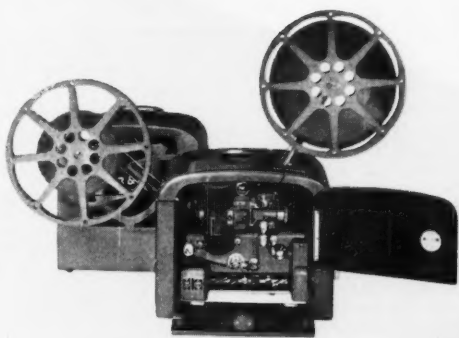
**YOU CAN HANDLE
ALL THESE JOBS
BETTER
AT LESS COST
WITH A
BELL & HOWELL**

- ☒ Customer selling
- ☒ Training new salesmen
- ☒ Refresher training for seasoned salesmen
- ☒ Distributor conferences
- ☒ Reaching retail sales personnel
- ☒ Training shop employees
- ☒ Improving personnel relations
- ☒ Lunch-time theater
- ☒ Employee social programs

Everywhere you can profitably employ sound motion pictures, you can do the job better with performance-proved Bell & Howell Projectors.

B & H Filmosounds, for instance, are now even finer than ever before—even further ahead in their superiority for exacting business and industrial service.

Without obligation, a Bell & Howell representative will gladly work with you on any motion picture problem. For complete information, phone or write Bell & Howell Company, 7116 McCormick Road, Chicago 45.



NEW ACADEMY FILMOSOUND

Designed for 16mm sound or silent projection in larger halls. Speaker in separate case—8", 12", or power speaker, as required. With the 8" speaker, this Filmosound provides *double* the sound output of any other lightweight projector . . . with 8" **\$495** speaker, now only . . .

ALL FILMOS ARE GUARANTEED FOR LIFE

During life of product, any defects in workmanship or material will be remedied free (except transportation).

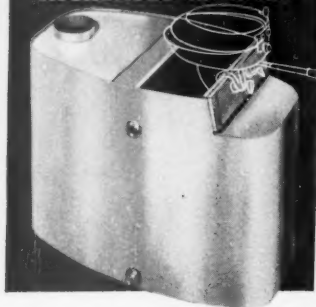
Precision-Made by

Bell & Howell

Since 1907 the Largest Manufacturer of Professional Motion Picture Equipment for Hollywood and the World

Special Message to Management

**NEW TEST-TANK
SAVES 50% AND
INCREASES MARKET**



How an entire industry profits by Stolper-designed-and-fabricated tank for testing Outboard Motors...lower cost, lighter weight, smart appearance and greater convenience among ten advantages that increase demand

Here is a typical sample of the versatile and profitable Stolper service to a wide variety of manufacturers... sheet metal parts and assemblies, specially designed, or fabricated exclusively to customers' specifications. Stolper adds complete design and fabricating facilities to your plant without adding to your payroll.

Every sales outlet for outboard motors needs a test-tank for demonstration and motor adjustment. Cost of previous designs, provided either by manufacturers individually or "home-made", have absorbed the entire profits from two to four outboard motors. The above design, skillfully engineered, costs less than the profit from a single outboard motor.

Have you a Sheet Metal Problem?

If you have, here's what to do: Submit your requirements for confidential analysis by Stolper Sheet Metal engineers... or send blueprints, specifications (and your volume forecast, if available) for quotations.

Get this FREE Book. Stolper is America's foremost contract fabricator of sheet metal... serving the leaders in the nation's metal working industry. You'll want this FREE booklet, "STOLPER, Your Sheet Metal Department". USE THE COUPON.

STOLPER STEEL PRODUCTS CORP.

3220 W. Fond du Lac Ave., Milwaukee 10, Wis.

Custom-built tanks, Housings, Enclosures, Cabinets, Hoods, Guards, Fenders... and other Sheet Metal Parts and Assemblies.

STOLPER STEEL PRODUCTS CORP.

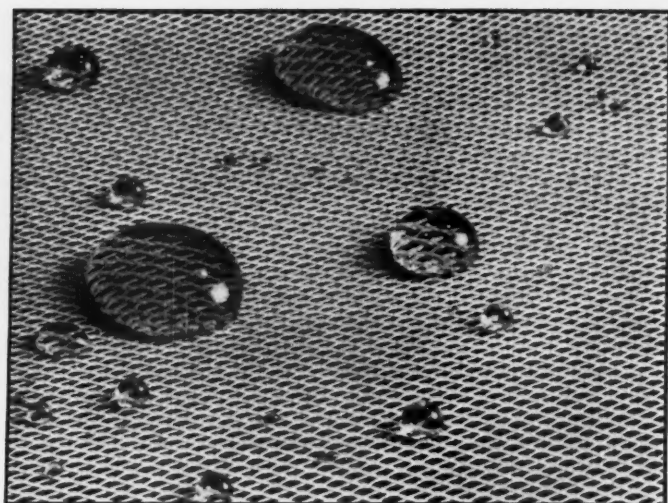
Department B-5, Milwaukee 10, Wis.

Please send us a FREE copy of booklet — "STOLPER, Your Sheet Metal Department".

Name.....

Firm.....

Address.....



REPELLING WATER is only one of the uses Dow Corning is testing in...

Getting Silicones Started

Dow Corning Corp.'s problem is to make consumers and industry familiar with a strange material—while its researchers keep dredging up new uses.

You may find it tough to market golf balls or breakfast food—yet at least your customer knows what the product is. But how do you market a brand new material with a coined name no one ever heard of before and with potential uses that haven't even been touched?

• **Cousins of Glass**—That, in brief, was the merchandising problem that Dow Corning Corp. faced when it began to develop a postwar market for silicones. These are chemical cousins of glass—are available in the form of liquids, semi-solids, grease-like compounds, and rubbery solids or resins that polymerize to form flexible, heat-resistant films.

Silicones in their present forms are largely the result of research by Dow Corning and General Electric Co. (BW—Mar.29'47,p47). They based their work on the possibility that silicon—major constituent of sand—might be used to form as wide a variety of compounds as carbon, its next-door neighbor in chemistry's periodic table. Hurried out of the laboratory and into commercial production during the war, silicones were used in semi-secrecy as insulating and waterproofing materials in aircraft engines and radar. When the war ended, plant and personnel couldn't be kept going—unless the many potential applications were developed rapidly.

• **Telling the Story**—Developing the new applications was just one part of Dow

Corning's marketing job. Another, just as important to the Midland (Mich.) company, was to get the story of these uses across to U. S. business.

Dow Corning (which is owned jointly by Dow Chemical Co. and Corning Glass Works) decided to make its story known in two ways. One was to go directly to companies which D.C. felt could make immediate use of silicones. The second method was unorthodox: The company would call the attention of industry to its versatile material by developing and selling a line of consumer silicone products.

• **Starts With Research**—Dow Corning's marketing story—both industrial and consumer—begins at the research level.

The researchers have a pretty free hand in adapting silicones to new applications. Results of their research go to operating and administration people for evaluation. Many projects end there. Manufacturing costs may be too high for competitive selling; or the market may turn out less rosy than had been anticipated.

• **Lower Prices**—If the proposed application seems to have sales merit, however, development work is pushed. And the sales force goes to work to peddle the final results.

D.C.'s direct industrial marketing effort is fairly traditional. Major effort is to acquaint technicians everywhere with

silicones' physical properties. The company does this by distributing data sheets and by publishing periodically booklets called *Silicone News*, *Silicone Notes*, and *Silastic Facts*.

• **Consumer Lines**—D.C.'s sales pattern in the consumer market has followed numerous paths. The reason: Nearly all products developed thus far for the retail field must be sold differently. Dow Corning merchandising people say jocularly that they'd like to see just one product developed which can be distributed identically with one of its fore-runners.

The most successful item in the D.C. consumer line started out in the gadget area—but soon gained wide acceptance. This item, *Sight Savers*, is a pad of silicone-treated tissues for wiping eyeglasses. It sells for a dime in drug stores. It is also reaching the premium advertising field; companies are giving them away with special imprints for promotional purposes.

Sight Savers were developed at the suggestion of Corning, D.C.'s more consumer-minded parent. Silicones, which have a natural affinity for glass, had already been introduced in liquid form as an eyeglass cleaner and polish, but sales were poor. Research then changed the form of the product to the handy tissue pack.

• **Slow Start**—The next obstacle was the reluctance of druggists—natural selling outlets—to stock still another item. They had already lost money on previous efforts to find a market for eyeglass cleaners. Dow Corning retained the Reuben H. Donnelly organization of Chicago to place *Sight Savers* in most drug stores in the Chicago area.

The local success of the product under that impetus was remarkable. *Sight Savers* began to appear on Chicago counters; an adroit counter display



SIGHT SAVERS, like matchbook covers, now serve as an advertising medium

PUTS PEP

IN EVERY (PRODUCTION) STEP

Water Coolers
GENERAL ELECTRIC

SURVEY OF YOUR NEEDS. G-E Dealer (see "water coolers" in your Classified Directory) will survey your plant or office without obligation... For booklet write General Electric Company, Department BW-10, Bloomfield, N. J.

for letters that mean business...



• Letters with a crisp, business-like appearance are bound to bring in business. That's why it pays to use a modern, attractive letterhead—and the best of modern business papers. Use *pre-tested* Nekoosa Bond—for fine appearance, durability and the added prestige of a famous watermark.

America
does business
on...



NEKOOSA-EDWARDS PAPER COMPANY
Port Edwards, Wisconsin

It pays to
plan with your
printer!

helped. Other cities were then invaded through distributor organizations. Today Sight Savers are marketed through about 1,000 drug distributors, are found in 80% of the nation's drug stores.

• **Other Products**—On another front in the consumer field, Silastic, the D.C. silicone rubber, is still feeling its way—not too successfully as yet. One example: a series of Silastic table mats, kitchen potholders, and "stovetoppers." Its apparent trouble: It isn't competitive in price with conventional merchandise.

One highly successful D.C. product, Pan Glaze, falls somewhere between the consumer and industrial categories. Pan Glaze is a silicone coating which bakers use to eliminate greasing of bread and bun pans before each baking.

The idea for this application grew out of mold release fluid—a strictly industrial product intended to ease release of rubber and plastic parts from their forming molds. One technician decided to adapt the idea to baking (BW—Jun. 22 '46, p62).

• **Word of Mouth**—The Harvest Baking Co., at Midland, became a practical testing place. Experience there showed that one application of D.C. Pan Glaze gave easy release of bread for 150 to 200 bakings, eliminating greasing and degreasing the pans.

In this instance, it was largely word-of-mouth advertising that spread the Pan Glaze story. Bakers mainly do localized business, have few competitive secrets from each other. Bakers throughout Michigan came to visit Harvest Baking Co., then went away and ordered Pan Glaze. The circle widened. Today the material is widely distributed.

• **Dental Use**—Other products have equally varied histories. Take a silicone fluid, for instance, which is just about to go on the market for use in sterilizing and lubricating dental equipment.

A researcher at the University of Michigan was working on the problem of finding a substitute for mineral oil, which is used for this purpose. He had to find something that would withstand high sterilizing temperatures without decomposing and that would still do the lubrication job.

He read how silicones had replaced petroleum oils and greases in extreme temperature applications, and got samples. One of them worked well. Dow Corning went ahead with the findings, and has just completed a deal with Ritter Co., major dental equipment producer at Rochester, N. Y., for nationwide distribution.

• **Water-Repellent**—An example of the patient effort and money required to develop and introduce a new silicone product is DeCetex 1107, a new water-repellent, but air and vapor permeable, treatment for textiles.

It has been known for years that silicones repel water more forcibly than

any material, with the possible exception of wax. The problem has been to apply a durable silicone treatment to textiles without damaging the fibers.

• **Research**—Months of research, testing, and working with finishing plants were then required to develop a silicone treatment that was effective on silk, wool, viscose, acetate, cotton, and nylon, as well as glass fabrics. With development and testing completed at Dow Corning, engineers then had to develop special production methods so that it could compete in price with other products.

At the moment, DeCetex is found mainly in a pot on the bench of a sober-faced girl researcher in the building behind and just to the right of the office at Midland. You can also find it in test rooms at some fabric mills. Consumers will be getting it soon—but not as DeCetex. It will come already impregnated into cloth.

MARKETING BRIEFS

Dearth of sales has piled up Schick's electric-razor inventories. So president K. C. Gifford says production has been halted until Jul. 1, "perhaps longer."

Retail sales in March didn't change much from January and February, after adjusting for seasonal factors. And they came to \$10.5-billion as against \$10.7-billion in March, 1948.

Oklahoma's loss-leader law was axed by the state supreme court (BW—Apr. 9 '49, p63). But last week the court turned around, held that the Dry Cleaners Board could fix prices since the business affected the "public health, safety, and general welfare."

Deliveries of Nash cars mounted up to the biggest March in 20 years. H. C. Doss, vice-president in charge of sales, puts the month's total 40.1% over February's.

Vacuum-cleaner sales at the factory came to 309,897 units in March. That's 13% under the March, 1948, figure, according to the Vacuum Cleaner Manufacturers Assn.

New gas heaters are O.K. in Louisville. The public service commission has lifted a two-year ban on new equipment—as long as it doesn't burn more than 1,666 cu. ft. an hour.

Newspaper advertising in 52 cities hit 202-million lines in March, up 6.6% over March, 1948. Media Records shows automotive advertising up 51.7%; general, 21.1%; retail, 4.7%; financial, 0.5%. Classified was off 4.1%.

How Hard Can You Work... to Get Fired?

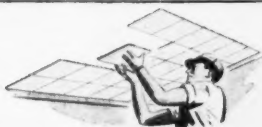


"I'm the Chap
who wants to know



"Night after night I come back to the office after dinner . . . to finish up odds and ends I can't manage during the day. I'm just as efficient as the next guy, but *no one* can do a good day's work in a noisy office. I can't concentrate, get jumpy and nervous and keep making 'careless' mistakes. And here's the payoff! Now I get told that I'm costing the company far too much overtime, to cut it out . . . 'or else!'"

"I'm the Fellow
who can tell you!



"Keep your job, Mister, and do a day's work *without* overtime! Tell your boss that spending a *little* to quiet the office will save him a *lot* on overtime pay. Tell him Sound Conditioning work can be done without interrupting office routine. By calling *me* in, he'll cut personnel turnover and get greater efficiency from his entire staff. Why *me*?"

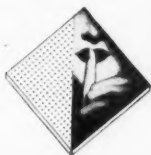
"I'm a member of the largest and most experienced Sound Conditioning organization in the country. Acousti-Celotex has completed over 200,000 ceiling installations . . . more than any other company in the business. We have the correct materials for *every* kind of Sound Conditioning job. If you are interested in increasing production efficiency, I'd like to give you a free analysis."

GUARANTEED

Offices, stores, schools, banks, churches, and factories from coast to coast are already enjoying the benefits of modern Sound Conditioning. Acousti-Celotex Tile, for example, can immediately increase personnel efficiency up to 10%, cut employee turnover, save time and money . . . daily! And you can paint Acousti-Celotex Tile repeatedly, *without reducing its superior sound absorbing efficiency!*

Celotex has back of it the years of scientific research, the

nationwide organization and quality-proved products which enable your distributor to *guarantee* his work, his materials, his Sound Conditioning techniques. For the name of your local Acousti-Celotex distributor in the U. S. or Canada and a **FREE** copy of the informative booklet "25 Questions and Answers on Sound Conditioning," write to The Celotex Corporation, 120 S. La Salle St., Chicago 3, Illinois.



ACOUSTI-CELOTEX

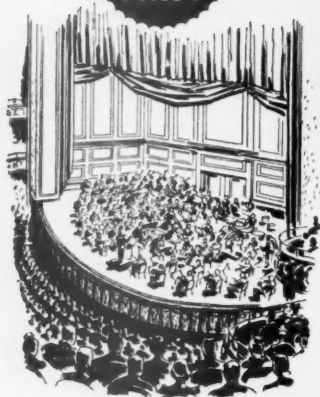
REGISTERED
U. S. PAT. OFF.

Sound Conditioning

FOR OFFICES • FACTORIES • BANKS • SCHOOLS • CHURCHES • STORES • HOTELS • AND HOSPITALS

When
you think of
Pittsburgh

Think of
**PEOPLES
FIRST**



Although Pittsburgh's greatest renown is associated with industrial achievements, the city provides many notable cultural advantages for its residents. It is the home of Carnegie Institute, comprising famed art galleries, museum, music hall and library. Its Phipps Conservatory, Allegheny Observatory and Buhl Planetarium are outstanding. It has a fine Symphony and annually presents the world's greatest musicians. A proposed new Civic Theatre will be unique among open air amphitheatres. Five colleges and many other cultural features are available.

These facilities are vital to you and to the people you will ask to staff your new operations in Pittsburgh. And it is also important to know that one of the nation's largest banks has the facilities and the desire to serve your Pittsburgh banking needs. Your inquiries will be welcomed.

PEOPLES FIRST NATIONAL

BANK & TRUST COMPANY

Pittsburgh 30, Pa.

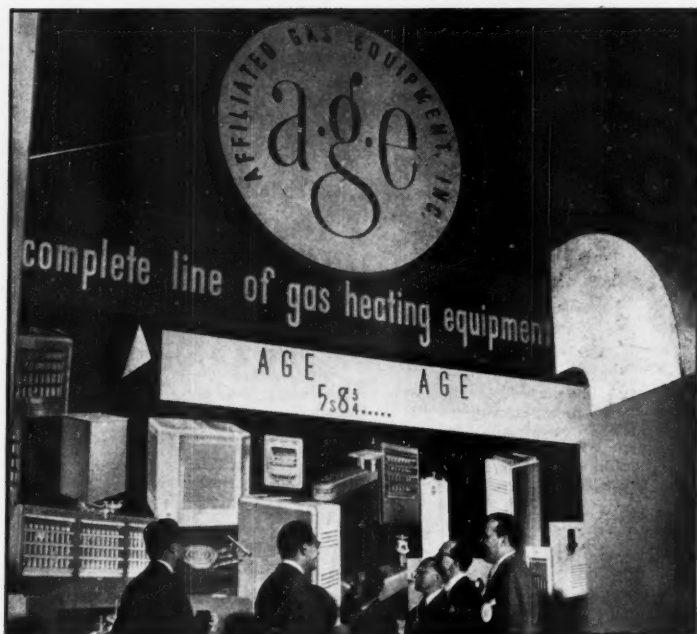
Member F.D.I.C.

FINANCE

Making Yourself Known in



1 When trading started on Affiliated Gas Equipment's stock, the company wanted to be sure Wall Streeters knew about it and its products. So it set up an exhibit in the building at left. J. P. Morgan & Co. is in center building; Stock Exchange is beyond



2 Ralph Rotnem (center), of Harris, Upham & Co., chats with Frank Nugent, A. G. E. promotion manager (right), before a photomural of A. G. E. products. Ticker tape shows first sale of A. G. E. common, on same day show opened (TURN TO PAGE 90)

Wall Street

Affiliated Gas Equipment shows traders and analysts what it makes so that they will recognize its stock.

If Wall Street doesn't know you, you can't expect much of a scramble for your stock.

• **Remedy**—Affiliated Gas Equipment, Inc., Cleveland, is one company that felt Wall Streeters were pretty much in the dark about it and its wares. So last week, the same day trading started in its stock on the New York Stock-Exchange, Affiliated opened a special exhibit to show financial men what it has to offer.

Affiliated was formed last year to acquire three subsidiaries of Dresser Industries, Inc., Cleveland. To raise the money, it borrowed \$4-million from life insurance companies. Then last January it netted about \$10-million from public offerings of preferred and common stock.

With the money, Affiliated bought Bryant Heater Co., Day & Night Mfg. Co., and Payne Furnace Co., all makers of gas appliances. The three, however, are keeping their identities. They operate as separate divisions; each continues its trademarks and distribution channels.

• **Name Play**—Affiliated believes it has the most complete line of gas appliances in the country. Its three divisions date back before World War I. But when Affiliated got set to list its stock on the Big Board, it realized it had to make its name better known to traders. To find the best way to do it, the company went to H. M. Gartley, a stockholder-relations adviser. He suggested that Affiliated bring its products to Wall Street, and exhibit them as it might at a trade convention.

• **Show**—Last Tuesday Affiliated opened the exhibit for a four-day run at 37 Wall St.

Security analysts from many Wall Street firms trooped in to have a look. They saw industrial and domestic furnaces, space heaters, water heaters, and air conditioning units. They scanned charts on comparative costs of gas with other fuels.

One particular attention-getter was a map showing the developing network of U. S. natural gas pipelines. It showed more and more gas coming into the heavily populated, industrial northeast (BW—Nov. 6 '48, p. 22). Affiliated's point: This should mean expanding business, good earnings, for the company.



CONTINENTAL makes them all and thousands more

Of all the 400,000 varieties of fastenings that literally hold our industries together, Continental makes a large proportion marketed under the famous HOLTITE trade name. Most of them are standard — screws, nuts, and bolts for every use in every industry. Others like the well-known HOLTITE-Sems and HOLTITE-Phillips screws are patented specialties and the famous HOLTITE-Thredlock, Locktite and Tap screws were first designed and produced by HOLTITE. Sometimes a fastening engineered by HOLTITE for one industry finds an unexpected use in another. Often a HOLTITE-Engineered fastening will replace several parts that a manufacturer is using. Why not discuss your fastening requirements with a Continental Sales-Engineer. He will focus on your requirements all the broad industrial-fastening experience and ingenuity of Continental.

Remember Continental is constantly improving HOLTITE products, lowering their cost and broadening service.

ENGINEERED FASTENINGS FOR PRODUCT ENGINEERS

A. This chrome plated Phillips screw used on passenger guard rails in busses has a special shaped head to dress up appearance and provide additional shear resistance.

B. A special shoulder on this unusual HOLTITE Phillips motor bus seat adjusting screw assures snug, rattle-free fit between vehicle body and driver's seat.

C. The Phillips head on this special HOLTITE-Sems bolt speeds initial driving. The hex head allows use of a torsion wrench for final adjustments and repair in the field. This unique design cuts assembly time on truck chassis by several minutes.

D. An example of a HOLTITE "Lock-Tite" screw. The screw and lock washer come in one solid piece. With but one part to handle, assembly steps up and waste drops to a minimum.

This Trademark
HOLTITE
T. M. REG. U. S. PAT. OFF.
means made by —



1904

CONTINENTAL
SCREW COMPANY

NEW BEDFORD, MASS., U.S.A.



1949

SAVE!

on handling costs—



54%
54% faster than with old-fashioned methods... that's how Farquhar Trough Conveyors team up to handle bulk ammonia sulphate from freight car to ship's hold at 120 tons per hour.



93%
"Time saving of 93%" reports retail coal operator who uses Farquhar Radial Storage Conveyor system coal yard. Farquhar makes possible unloading 70-ton hopper car in one hour, a job that took two days by hand labor.



87 1/2%
Big grain warehouse unloads feed from freight cars in four hours with Farquhar Conveyor help... a job that formerly took 32 man-hours... a clear-cut savings of 87 1/2%.

NO matter what you handle... packaged goods, coal, aggregates or bulk materials in any form, Farquhar has the right conveyor to do your job *faster, cheaper, better*. Tell us your handling problem, we'll give you the information you need! *Send the coupon today!*

Farquhar

MATERIALS HANDLING
CONVEYORS

Mail Today for **FREE** Information

A. B. FARQUHAR CO., 201 Duke Street
York, Pa., or 612 W. Elm St., Chicago 10, Ill.

Send me information on Farquhar Conveyors.

I move ☐ Bulk materials

☐ Coal and aggregates ☐ Packages

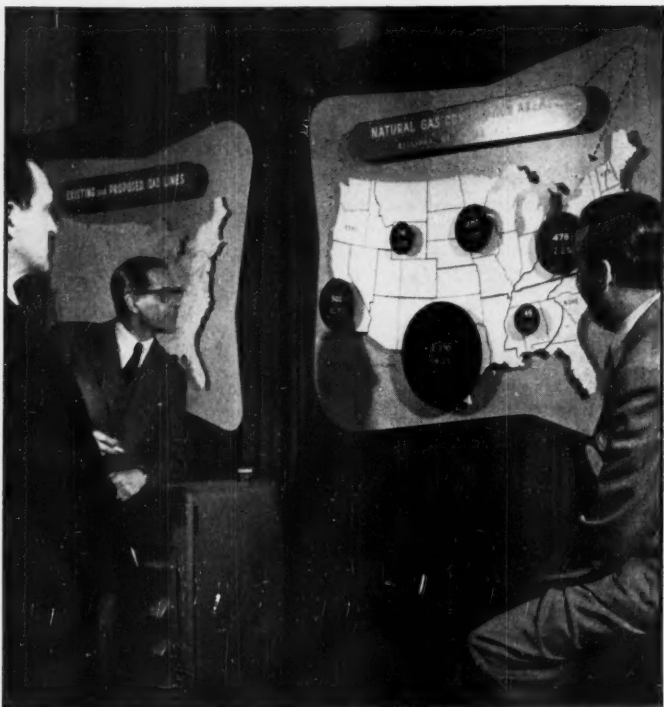
Name

Company

Address

City..... State.....

DISPLAY IN WALL ST. (continued from page 88)



3 Nugent shows Rotnem how U. S. consumption of natural gas is divided geographically. Rotnem learns that the Northeast is the second biggest consumer of natural gas



4 Rotnem and other investment analysts inspect some A. G. E. industrial burners. Names above are those of the company's three divisions. Each division operates separately, using its own trademark

OZALID copies save time, money, labor!



5 While Rotnem watches, Nugent lights up one of his company's water heaters



6 Nugent explains workings of an apartment unit which contains a space-heater and water-heater



2. Translucent originals will eliminate any intermediate steps. You get Ozalid copies directly . . . no special "masters," no time-delaying machine set-up. Stationers and printers will help you save time and money by supplying all business forms (even file cards, business-reply cards and letter-heads) on translucent stock, now.



1. Duplicate file cards, letters, reports, drawings in seconds! Just place them against one of the many types of Ozalid sensitized materials and feed them into the Ozalid machine. Positive copies are delivered dry and ready for use. Make 1 copy or 1000! Ozaprints can be made in different colors, against different colored backgrounds, on different materials.



3. Imagine asking for "ten copies in three minutes" . . . and getting them! Give your copy-typists more important work to do by letting the office boy operate the simple, speedy Ozalid machine! A fuller explanation of Ozalid awaits your request. Ask for it today. Or find your Ozalid distributor in the classified telephone book.

**Don't copy...use
OZALID**

A Division of
General Aniline & Film Corporation
"From Research To Reality!"

OZALID Johnson City, New York

Gentlemen: Please send free copy of "The Simplest Business System" . . . fully explaining use of translucent papers and Ozalid Streamliner.

Name _____ Position _____
Company _____
Address _____

DEPT. NO. 57

Ozalid in Canada—Hughes Owens Co., Ltd., Montreal



Extra Protection Pays...

especially for electrical apparatus and appliances...

Build plus values into your electrical apparatus and appliances... specify the proper electrical insulations and extend the useful life span of electrical apparatus and appliances.

MITCHELL-RAND since 1889 the one dependable source and headquarters for everything in electrical insulation...

MITCHELL-RAND INSULATION COMPANY
INCORPORATED
51 MURRAY ST. NEW YORK 7, N.Y.



GLOBE SPRINKLERS

ALL FIRES Are Extinguishable

GLOBE protection controls the FIRE menace, and places "strictly preventable", "partly preventable" and "cause unknown" FIRES all in the one class...EXTINGUISHABLE.

Install GLOBE Sprinklers now.

GLOBE AUTOMATIC SPRINKLER CO.
NEW YORK...CHICAGO...PHILADELPHIA
Offices in nearly all principal cities

THEY PAY FOR THEMSELVES

clues: Turning the "Searchlight" on Opportunities

Published as space is available—approximately once a month. Rate: \$1.00 per line, minimum 2 lines—2 weeks for top number. Address: *replies* c/o Business Week.

sales or general manager available

• 13 YEARS experience all phases management problems with 8 years emphasis on sales and five years general management. Box 8795

inventor

• INVENTOR WILL accept commission for the creation of new product, process, or solution to existing problem. Substantial engineering and practical background. Box 8418.

Avery Quells One More Revolt

Montgomery Ward's 75-year-old chairman comes through annual stockholders' meeting with flying colors. Opposition of investment trusts wasn't strong enough to unseat the doughty warrior.

The "stockholders' revolt" at Montgomery Ward & Co. just didn't come off as expected last week. Iron-handed, 75-year-old chairman of the board Sewell L. Avery firmly kept his grip on the No. 2 retail-mailorder company. He emerged from the annual stockholders' meeting in Chicago with cheers, applause, and a huge vote.

• **Landslide**—Of the four unopposed directors up for re-election, Avery got 5,181,000 votes—\$45,000 more than the next highest candidate. (Many ardent supporters concentrated their votes on Avery, didn't vote for the other nominees.) Stock represented in person and by proxy was 4,781,000 shares, about 67% of the outstanding common and Class "A."

The vote clearly shows that Ward stockholders have long memories. They remember that in the last depression Avery pulled the company out of the red, turned it into a steady dividend payer. Recent turmoil—which cost Ward one president, nine vice-presidents, and two "Morgan" directors—seems to have shaken only a few investment trusts.

• **Dissent**—Thus Massachusetts Investment Trust, Ward's largest single stock-

holder, promised it would vote its 104,000 shares for the three other nominees for director, but not for Avery. A second investment trust, Wellington Fund of Philadelphia, voted all its 8,000 shares for director David A. Crawford. And a Chicago firm of investment counselors said at the meeting that it was not voting any of the 6,200 shares for which it held proxies for any director.

But other investment trusts appeared to be supporting Avery. Said one: "If we hadn't approved of the present management, we would have liquidated our Ward stock long ago."

• **V.P.'s Displayed**—In all, it was an Avery show from beginning to end. Some 400 or 500 stockholders turned up in the Ward general offices. They cheered Avery's remarks and laughed at his quips. When one small stockholder suggested that Avery offer an explanation of recent events at Ward's, Avery trotted out the eight new vice-presidents he promoted from the ranks to fill the vacancies left by this year's wholesale resignations.

The only dissenting note was a critical statement by J. McNeil Kennedy, representing the Chicago investment

10-Year Comparison: Ward's and Sears'

Years ended Jan. 31	Sales		Ratio of Ward's to Sears'		Net Profits		Ratio of Ward's to Sears'	
	Ward	Sears	Ward's	Sears'	Ward	Sears	Ward's	Sears'
1940.....	\$474,882	\$617,414	76.9%		\$27,011	\$37,255	72.4%	
1941.....	515,911	704,301	72.9		23,028	36,087	63.7	
1942.....	632,709	915,058	69.1		22,352	36,712	61.0	
1943.....	635,007	867,509	73.2		20,438	33,885	60.2	
1944.....	595,933	851,535	70.0		20,677	33,712	61.4	
1945.....	620,969	988,770	62.8		21,286	34,392	61.9	
1946.....	654,779	1,045,250	62.6		22,932	35,835	64.0	
1947.....	974,257	1,612,596	60.4		42,282	100,099	42.3	
1948.....	1,158,675	1,981,536	58.5		59,050	107,740	54.9	
1949.....	1,211,956	2,295,991	52.8		68,232	137,206	49.7	

Years ended Jan. 31	Net Working Capital		Net Worth		Common Stock Book Value	
	Ward	Sears	Ward	Sears	Ward	Sears
1940.....	\$148,895	\$164,262	\$210,000	\$204,776	\$36.61	\$11.84
1941.....	163,477	171,888	221,182	278,263	38.75	12.24
1942.....	178,892	183,830	236,689	293,662	41.96	12.77
1943.....	200,391	196,020	255,281	312,209	45.62	13.57
1944.....	212,059	216,783	265,113	324,533	47.47	13.96
1945.....	222,081	227,237	274,554	336,973	49.26	14.36
1946.....	240,608	256,290	285,641	349,522	51.47	14.32
1947.....	(1) 333,146	288,177	(1) 382,336	409,002	56.27	17.31
1948.....	366,625	315,371	420,715	475,522	62.13	20.12
1949.....	412,948	359,117	468,029	559,714	69.50	23.67

(1) Includes reserves for postwar adjustments, price declines, contingencies, etc. (2) Received \$64.2-million from sale of new stock in 1936. (3) Adjusted for 1945's 4-for-1 stock splitup.

counselors' firm. He compared Ward's rate of growth unfavorably with that of its "chief competitor" (obviously Sears, Roebuck—table, page 92).

• **Rebuttal**—Avery suavely took this cue to defend his conservative management policies since the war's end. Once again he reminded stockholders in detail of Ward's successful sales and earnings record since he took over. This year's management revolt he calmly dismissed as a "conspiracy."

In defense of his much debated policy of hanging onto the company's resources against a postwar depression, Avery showed stockholders a chart which goes to the heart of his philosophy. It depicted the sharp price drops and depressions which have followed each of the four major wars since 1800. Sure, said Avery, such historical data can't be taken as an absolute forecast of what's ahead; just the same, it's a good idea to look at the record when charting your course. He said he believes the August, 1948, peak in commodity prices was the high point of postwar inflation.

• **Grip**—But Avery's firm grip on his stockholders stems more from the steady earnings and dividends than from confidence in his management theories or his fame as a business prophet. (Because he predicted dark days ahead in 1929, some of Avery's cronies then dubbed him "Gloomy Sewell.")

Avery took command at Ward's in 1931 with J. P. Morgan & Co. backing. The merchandising company was beginning to wobble badly. It had ventured into the retail-store field, had a sizable string of stores. But most of them were in farm areas where the depression hit hardest. In 1931, Ward's loss was about \$8.7-million. Losses in 1931 and 1932 were \$14-million.

• **Prescription**—Avery's first moves at Ward's were:

(1) To spike the rumor of a merger with Sears.

(2) To prune out the unprofitable retail stores and stop all store expansion.

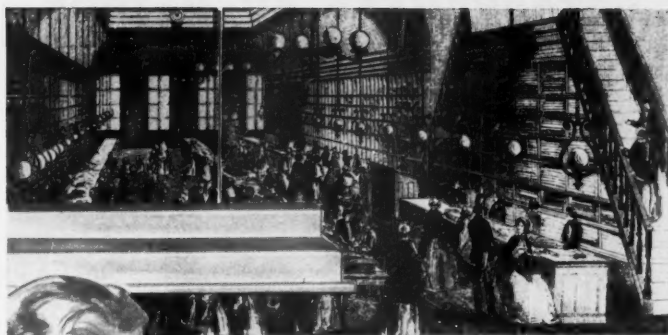
(3) To put in half-a-dozen regional managers to keep a sharp eye on each business district.

(4) To name R. H. Macy's wonder boy, executive vice-president, Walter Hoving, vice-president and general sales manager. (One of the earliest members of the "Ward Alumni Assn.," Hoving is now president of the company which owns the Bonwit Teller stores.)

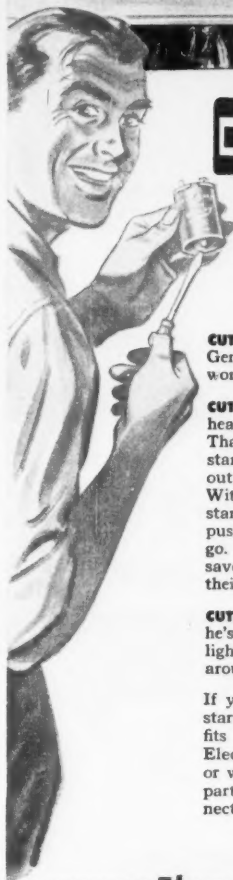
In two years, Avery had Ward's back into the black—where it has comfortably stayed ever since.

• **Silver Spoon**—Avery is one rich man's son who made good.

When he became president of Ward's, he had already been president of U. S. Gypsum for 26 years; he was also a director of U. S. Steel, Armour & Co. Rumor had it that he had been



BETTMANN ARCHIVE



Groping for facts on Lighting Costs?

CUTTING COSTS is this starter's Number One job. It's the General Electric Watch Dog* starter—the starter that won't let fluorescent lamps blink.

CUTTING COSTS on maintenance was my Number One headache when we first planned to re-light the old place. That's why I insisted on fixtures with G-E Watch Dog starters throughout. With ordinary starters—every worn-out lamp is an emergency as soon as it starts to blink. With Watch Dogs—an old lamp burns out, and the starter turns it off. We replace lamps on routine checks, push the starter reset button, and the new lamp's set to go. Watch Dogs save us time, cut ballast burnouts, and save on starters. All because Watch Dogs don't waste their time trying to light flickering worn-out lamps.

CUTTING COSTS means all-round savings to the Boss. And he's getting 'em with Watch Dogs. Continuous, even lighting is cutting clerical errors and saving tempers all around. He's with me all the way on the Watch Dog story.

If you're interested in the General Electric Watch Dog starter story—if you'd like to know more about the benefits of fixtures with Watch Dogs—contact the General Electric Accessory Equipment representative in your area, or write to Section Q31-410, Construction Materials Department, General Electric Company, Bridgeport 2, Connecticut.

Fluorescent Lighting

Does More... Costs Less... with...



G-E TURRET* LAMPHOLDERS FOR EASY maintenance, come in three styles for two- or three-lamp units. Insist on General Electric lampholders on the fixtures you buy.

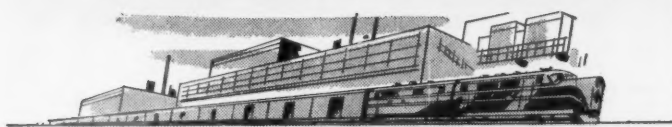
G-E WATCH DOG STARTERS START lamps hot—stop them cold when flicker begins—outlast ordinary starters. Look for this tag for efficient fluorescent lighting.

*TRADE-MARK REG. U.S. PAT. OFF.



GENERAL ELECTRIC

"STOCKPILED" BY NATURE



ROUTE OF THE PRAIRIE MARKSMAN

• Right in the heart of industrial Illinois lies a region "stockpiled" with abundant low-cost power, good labor market, proximity to Eastern and Middle Western industries and favorable climate. Ideally suited for industrial expansion, this territory has a "bonus" feature in rail service over the modern Toledo, Peoria & Western Railroad, T. P. & W. Diesel-powered trains by-pass congested terminals by cutting across Illinois . . . speeding freight to markets everywhere. Dotting the 239-mile direct T. P. & W. route is town after town that invites development. It's new country for industry . . . with the money-saving advantages of fast, efficient T. P. & W. service.



Offices in 31 principal cities
Main Offices: Peoria, Illinois

TOLEDO, PEORIA & WESTERN RAILROAD

The Road That's Best . . . Links East and West

FOR Durability Speed AND Power

Keller Screw Drivers and Nut Setters are swift-moving, lightweight, with few parts, all accessible for maintenance. Workers like the trouble-free service they render on all kinds of "buttoning-up" jobs; use them for hours without fatigue. Alloy steel housings, one-shot lubrication, precision bearings add to efficiency.



SCREW DRIVERS

Power packed for driving machine, wood, metal, self-tapping screws. Short heads, straight, offset handles. Reversible.



NUT SETTERS

Nine sizes for high-speed nut setting. Interchangeable sockets. Short heads, straight handles. Straight running or angle type. Reversible models.



Keller Service Sales Engineers are nearby to help you.



offered the presidency of U. S. Steel, but turned it down.

Avery's father was a wealthy Michigan lumberman. After young Sewell got his law degree at the University of Michigan, his father made him president of Alabaster Co., a small Avery-owned gypsum producer. A few years later, Alabaster and some 35 other colleagues became what is now U. S. Gypsum. Avery was eastern sales manager for three years, then president.

As at Ward's, he got a reputation as a depression wizard—he led the gypsum company through the 1907 panic.

• **The War Years**—At Ward's, Avery's life has been anything but placid. There have been frequent storms and battles. These have come as a result of (1) Avery's insistence on keeping his finger on every detail; and (2) his firm opposition to union organization.

During the war years, Avery's bitter struggle against the C.I.O. Retail, Wholesale & Department Store union involved him in defiance of NLRB and War Labor Board directives.

• **Seizure**—So twice the government seized and operated Ward's via the Army. The high point of this invasion came when Avery, defying the Army's move to take over the Chicago mail-order plant, was carried from his office bodily by two soldiers.

As soon as he got his properties back in October, 1945, Avery canceled the compulsory maintenance of union membership and checkoff enforced by the Army under a War Labor Board directive. Since then the union struggle has been just about at a standstill.

• **Rumblings**—The latest upheaval in Ward's brass began last May. Nine top executives, including President Wilbur H. Norton, resigned because of Avery's close supervision of day-to-day activities (BW—Jun. 26'48, p24).

An effort to smooth matters over by clipping Avery's wings didn't work. On his insistence, the board of directors rescinded the changes.

• **Questions**—But Avery's series of victories still leaves two big questions open: (1) What will happen if he becomes incapable of functioning as chief executive? and (2) Will the new team of officers get along with Avery any better than their predecessors?

Observers feel that in the coming year there will be a renewed effort to find a president for Ward's.

• **Downtum**—Meantime, Ward's estimates that its first-quarter sales (for the period ending this month) were probably around \$240-million—or 12.8% less than in the same period a year ago. Sears figures its volume will be off about 8%. Sears hasn't guessed at its first-quarter earnings, although it says they will be below last year. Ward's estimates its net will be \$9.8-million vs. \$14.3-million a year ago.

The Stars Shine Outdoors

OR

How Mallory Got In The Movies



A nation on wheels. Great movie-goers. Put those two things together and you've got something big. And that "something" is the Drive-In Movie, now flourishing like the proverbial green bay tree.

But it wasn't all that easy. The first drive-ins were crude, permitted no individual controls and the conventional public address system sounded raucous down front, became a jumble of noise at the back. In some sections of the theatre, the sound seemed out of "synch" with the picture.

Then with a big boost from Mallory precision engineering, an ingenious device was created: a separate sound system for each car with individual volume control. Now you can turn it up good and loud when Grandma is in the back seat. Or you can turn it low to fit the mood. Synchronization is perfect.

So perfect is the sound in modern drive-ins that 546 play to full houses throughout the country, and it's only the beginning.

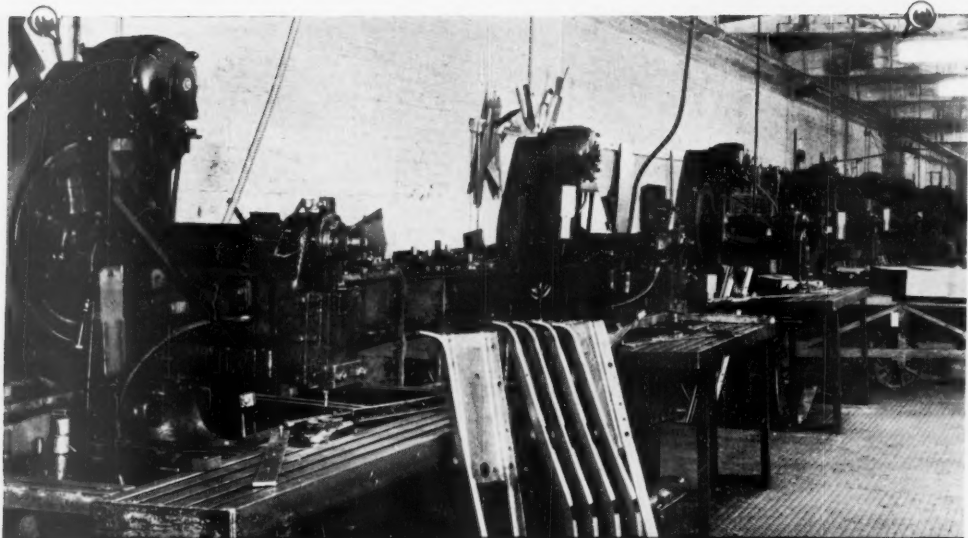
Many of the contributions to better living and to safer living have been accomplished with the aid of Mallory parts and materials—with the help of Mallory creative research. In the field of electronics, electrochemistry and metallurgy—in movies, television, automobiles, automatic home appliances and safety devices, Mallory has become preeminent by pioneering new ways, new materials and new ideas.

If you have a problem that falls within the area of Mallory's interests, it will pay you to consult with our Engineering Staff. Their knowledge and ability can help improve quality and cut costs. Consult them now.

MALLORY

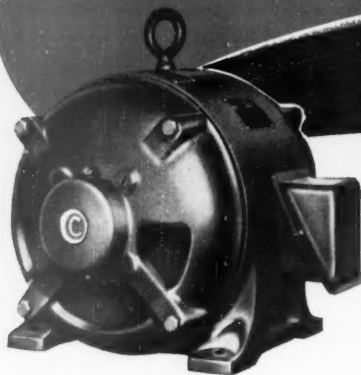
SERVING INDUSTRY with Capacitors • Contacts • Coils •
Rectifiers • Switches • Vibrators • Power Supplies •
Resistor Welding Material

P. R. MALLORY & CO., Inc., INDIANAPOLIS 6, INDIANA



The Correct *Century* MOTOR
Helps Keep Punch Presses on the Job-

✓ Maintain High Production
at Low Operating Cost



Popular types and standard ratings are generally available from factory and branch office stocks.

The illustration above shows eight Century 1½ horsepower general purpose squirrel cage motors operating small punch presses. The operations performed on these presses are highly repetitive, with comparatively short intervals between strokes—and require a small amount of energy per stroke.

However, for large presses with heavy impact and comparatively long intervals between power strokes, Century offers high torque, high slip, squirrel cage motors. These type SCT motors smooth out the load curve; save wear on the presses.

Century builds a complete line of electric motors in a wide range of types and kinds, in sizes from 1/6 to 400 horsepower.

Specify Century motors for all your electric power requirements.



CENTURY ELECTRIC CO. • 1806 Pine Street • St. Louis 3, Mo.

Offices and Stock Points in Principal Cities

A.T.&T. Bargain

Mother Bell offers lower conversion price and higher interest to put over its \$395-million bond financing.

American Telephone & Telegraph Co. is set to do its biggest sales job. Its newest bond issue—the largest single piece of new-money financing in corporate history—got the green light last week, as expected.

• **Favorable Terms—Shareholders** at A.T.&T.'s 64th annual meeting voted a resounding O.K. to the sale of \$395-million new 10-year convertible debentures. As bait for buyers the company is offering the bonds at very favorable terms.

The sale had been recommended earlier by A.T.&T. directors (BW-Feb. 26/49, p106). Following the meeting, A.T.&T. lost no time in registering the new issue with the Securities & Exchange Commission. And the bonds, which carry 3½% interest, are scheduled for offering shortly.

• **What Deal Is—Mother Bell** isn't going to the general public with its latest new-capital bid. The more than 765,000 stockholders will get first crack at the bonds, as they have often done during

the course of A.T.&T.'s big postwar financing deals. That huge group will have a chance to subscribe for the new bonds at par. The ratio: \$100 of bonds for each six shares of stock held on May 6.

Subscription rights to the new issue will be sent to stockholders on or about May 16. They can be used to take up bonds, or sold to others in the open market, any time up to and including June 20.

• **Inducements—Stockholders** get a break on the conversion price of the new issue. From Sept. 1, 1949, to June 20, 1951, they can convert the bonds into stock at \$130 (payable by surrender of \$100 of debentures and payment of \$30 in cash for each share to be issued on conversion). Only after mid-1951 will this price move up to \$140. On the two other convertible debenture issues A.T.&T. now has outstanding, initial conversion prices were \$140 and \$150.

The 3½% interest rate should sound good to stockholders, too. Only one of Mother Bell's 10 bond issues already outstanding can top it. That one is the \$150-million 25-year 3½% debentures sold publicly last December.

• **Money Needed—Why** is A.T.&T. holding out the twin bait of low conversion price and high interest? As everybody knows, it needs the money for the biggest expansion program any corporation has ever put on (BW-Jan. 8/49, p78).

Since V-J Day, A.T.&T. has had to sell some \$2,750,000,000 of new securities for its expansion. That means more interest and dividend payments to meet. And operating costs have shown even a sharper uptrend. As a result, in 1947 the Bell System fell short of covering its dividend requirements by a rather hefty margin.

It's true that rate hikes, authorized or actual, since 1946 have brought in some \$218-million more revenue annually. And efforts to cut everyday operating costs have helped. So, on a system basis, A.T.&T. squeaked past its \$9 dividend requirement last year.

• **Jumpy Market—But** that's shaving the margin thin. And though the earnings position has improved some lately, the company's stock hasn't been acting well. In recent weeks it slumped to around \$143 a share, its lowest level since 1943.

There was good reason then for the interest in last week's annual meeting. Some 78% of all shares was represented, by holders themselves or by proxy. And it turned out to be the longest meeting on record.

• **Peaceful—If** it was a long meeting, it wasn't a scrappy one. President Leroy A. Wilson found little "stockholder resistance." The new debentures were approved by an 18-to-1 vote. And several stockholder proposals that didn't have management approval were beaten.



Executive V.-P. at G.E.

Last week the directors of General Electric Co. elected Ralph J. Cordiner executive vice-president. (G.E. hasn't had an executive v.-p. since Charles E. Wilson moved up to the presidency in 1940.) Cordiner, 49, served for many years in the G.E. Appliance Merchandising Department, in 1938 succeeded Wilson as manager. After a period as president of Schick, Inc., and a brief hitch with the War Production Board, Cordiner became Wilson's assistant at G.E.



"... one of the best purchases we ever made"

Dear Sirs:

I'm glad you asked me how I liked our CANTON STOKERS after several years of operation, as we have had excellent results from them. It is probably the most ruggedly built stoker of its size on the market and is safe and dependable. We find it saves considerably on our coal bill and costs little to operate.

Altogether, I am well satisfied; we feel it is one of the best purchases we ever made.

J. H. McGary
FARNSWORTH
Television and Radio Corp.

Canton Stokers help hundreds of famous names in American industry meet today's higher operating costs. A size and model for schools, hotels, hospitals, laundries, industrial plants, commercial buildings of all types. Get facts and information on low cost installation and operation. Write CANTON STOKER CORP., MAIN PLANT, CANTON 2, OHIO. Representatives in principal cities.



the ONLY rammed drive stoker guaranteed against WEAR and defects for 5 years!

This soft rubber printing roll makes all

Elliott ADDRESSING MACHINES

SILENT and SAFE to operate



Your metal address plate cabinets will hold twice as many addresses when you use Elliott non-metallic address cards.

And your metal address plate embossing machine can be sold because addresses are stenciled into Elliott address cards by any typist with any standard typewriter.

Write us, to learn of other savings in your Addressing Machine Department.

Elliott ADDRESSING MACHINE CO.

151-J Albany Street, Cambridge 39, Mass.

Established 1898 • Rated AAA-1

Our booklet describes 28 models, \$45 to \$18,000



AS SHOPPERS become increasingly selective, sales-conscious manufacturers see . . .

BRIGHT PROSPECTS FOR BRIGHT METAL

Interest increases in pre-finished metals, offering both lustrous beauty and lower production costs.

"Skin deep" beauty costs but little, adds a lot to product salability. Hence pre-plated metals offer one opportunity to dress up a product while lowering its cost.

THE PRODUCT — Pre-finished metals are platings of copper, brass, nickel and chromium to such base metals as zinc, copper, aluminum, steel and brass. The best properties of several metals are thus combined: Beauty where it is seen, strength and rigidity where they are needed.

THE SAVINGS — Pre-finished metals eliminate three production steps — plating, cleaning and polishing. The manufacturer simply fabricates, then assembles. The metals can be stamped, formed, drawn, bent, soldered or spot-welded without damage to the lustrous finishes.

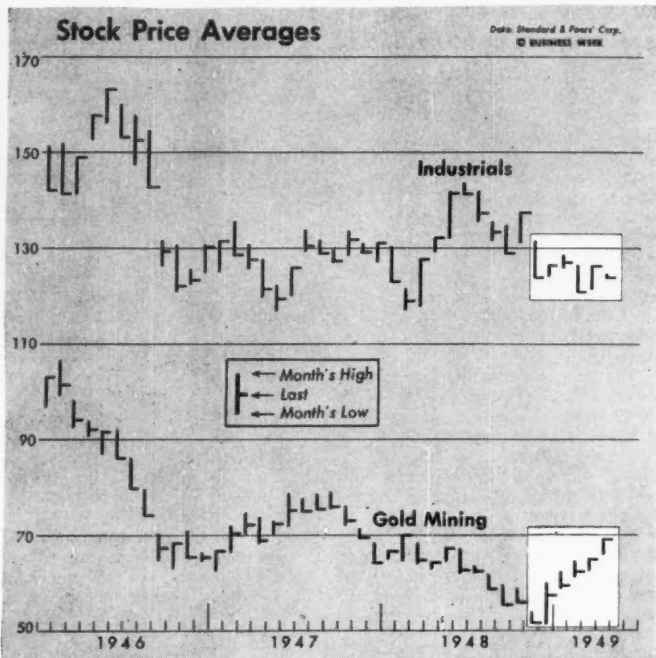
PIONEER — First manufacturer of pre-finished metals, American Nickeloid Company, Peru 11, Illinois, is marking its 50th Anniversary with a new study on the applications, properties and fabrication techniques for pre-finished metals. Copies are available on request.

American Nickeloid Co., Peru 11, Illinois



NEW "How-To" study on pre-plated metals

THE MARKETS



Gold Stocks Snap Upward

Investors are buying them principally as a hedge against deflation; gold mines make more money in bad times. Rumors of a rise in the government's buying price should be discounted.

Another symptom of deflation psychology has cropped up in the stock market: Gold-mining shares have been showing a strong price tone for several months (chart).

• **Thrives on Depression**—Traditionally, gold mining is a "depression industry." Between 65% and 75% of its costs go

to labor—and mine labor comes cheaper when other industries sag. At the same time, gold sells for a fixed price; there's no room to take up higher costs in good times, but the profit margin widens fast on the way down.

Wall Street hears that "smart money is going into the golds." (Of course, Wall Street hears things like that at the drop of a pin, but this time there seems to be something to it.)

• **Worldwide**—There is something more in the present picture than just "deflation" buying. There is a worldwide flurry in gold. The domestic gold shares aren't the only ones that have been strong lately; gold stocks have been booming abroad, too: on the Toronto exchange; in London trading; in far-off Johannesburg, South Africa, the region that's now the world's largest supplier of gold.

Several factors have played a part in this general rise of the golds:

Security Price Averages

	This Week	Month Ago	Year Ago	Year Ago
Stocks				
Industrial	144.7	147.2	149.7	152.6
Railroad	39.2	39.4	40.5	48.1
Utility	71.1	72.9	71.6	69.8
Bonds				
Industrial	98.8	98.3	97.5	95.2
Railroad	81.8	81.7	81.4	84.4
Utility	95.6	95.6	95.7	96.8

Data: Standard & Poor's Corp.

- The recent sales of South African gold for nonmonetary uses at prices as high as \$42 an ounce;
- Recurrent rumors that the U.S. government buying price for monetary gold may soon be raised from the \$35-an-ounce price now fixed by law;
- Recent sales of unrefined domestic gold (as permitted by law) at more than \$35.
- **Hedge**—In this country, however, the search for "deflation hedges" has undoubtedly been the most important fac-

tor in gold-stock buying. Few close followers of the gold picture really think there is much chance that the government will boost its gold-buying price soon (BW—Mar. 26 '49, p. 28).

And there is no indication that gold-mining operating costs have started to shrink much. In fact, many observers doubt that the gold companies will be able to do much in the months ahead to relieve the squeeze on profit margins that has plagued them since the end of the war.

Good Dividend Picture Masks Danger Signs

Many companies' first-quarter earnings are falling short of last year's high levels (page 19). But that has not been reflected by first-quarter dividends. Cash payments made in the three months on stocks listed on the New York Stock Exchange added up to \$917-million. That's \$87-million, or 10.5%, higher than in 1948.

• **Spotty Picture**—It would pay investors and traders, however, to take a close look at the Big Board's detailed analysis of payments (table, below). These figures do reflect—in a measure—the swing back to more "normal" earnings levels. They reveal, for example, that:

- About 80% of the over-all gain

in dividend payments was supplied by only 5 of the 29 industries covered.

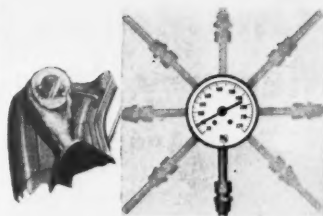
- This year's dividends were lower for 10 of the groups (only 3 declined in the 1948 first-quarter)

Note, too, what happened to individual issues. This year dividends were cut or suspended by almost 13% of all listed commons; in January-March, 1948, that was true of only 8% of the list.

• **Danger Signals**—So don't give too much weight to the sharp rise in the total of early-1949 dividend payments. Enough potentially unfavorable factors have cropped up to warrant a close watch on the trend of payments in the months ahead.

Industry	Number of Issues	Jan.-Mar. Dividend Payers		Dividend Results 1949 vs. 1948			Approx. Amount of Dividends (\$000 omitted)		% Change 1949 vs. 1948	
		1948	1949	Higher	Same	Reduced	1948	1949		
Amusement.....	21	16	14	2	7	7	\$13,489	\$11,826	-12.3%	
Automotive.....	66	50	46	22	23	8	66,522	94,976	+42.8	
Building.....	28	23	23	9	11	3	9,748	9,478	-2.7	
Business & office equip.	10	9	9	2	7	0	6,872	7,490	+9.0	
Chemical.....	76	65	63	12	46	8	86,865	98,799	+13.7	
Electrical equip.....	19	17	15	4	10	3	19,204	22,034	+14.7	
Farm machinery.....	8	6	6	2	3	1	12,080	12,095	+0.1	
Financial.....	30	19	19	7	9	3	19,269	19,387	+0.6	
Food.....	66	57	53	7	35	16	55,917	48,428	-13.4	
Garment mfrs.....	6	6	6	0	4	2	1,014	942	-7.1	
Land, realty & hotels	6	3	4	1	3	0	695	926	+33.2	
Leather & shoe mfrs.	11	9	8	0	4	5	5,854	5,450	-6.9	
Machinery & metals.....	90	81	82	22	52	11	32,576	34,549	+6.1	
Mining.....	38	25	24	8	15	3	30,971	32,826	+6.0	
Paper & publishing.....	33	30	29	6	21	3	14,403	15,505	+7.7	
Petroleum.....	43	32	34	17	15	4	84,749	93,599	+10.4	
Railroad.....	82	41	42	11	30	4	55,116	61,444	+11.5	
Retail merchandising	72	61	59	11	39	11	68,720	73,103	+6.4	
Rubber.....	10	8	8	0	6	2	10,616	8,507	-19.9	
Shipbuilding.....	5	3	3	0	3	0	727	727	...	
Ship operating.....	6	4	4	0	3	1	3,074	2,898	-5.7	
Steel, iron & coke.....	39	28	30	16	14	0	33,612	45,849	+36.4	
Textile.....	37	34	36	13	16	7	21,152	20,286	-4.1	
Tobacco.....	16	14	14	3	11	0	18,689	20,417	+9.2	
Transportation services	4	2	2	0	1	1	294	219	-25.5	
Utilities.....	75	57	57	14	40	5	\$110,859	\$121,430	+9.5	
U. S. Co.'s oper. abroad	24	8	9	2	3	4	11,980	11,223	-6.3	
Foreign companies.....	16	11	12	4	7	1	24,741	26,055	+5.3	
Other companies.....	50	24	29	14	14	4	9,992	16,577	+65.9	
Total.....	996	743	740	209	452	117*	\$829,797	\$917,045	+10.5%	

* Payments were reduced on 79 issues and eliminated or deferred on 38 issues.



Adjustable— to any angle!

It is as simple to turn the face of the Every Angle Thermometer to exactly where you want it as it is to adjust your car's rear-view mirror. The dial moves a full 180 degrees on two axes. Continual turning does not injure the "neck". One Every Angle Thermometer withstood a test of 15,000 turnings! The thermometer can be turned to any required angle for easy reading when installed in inaccessible positions on piping runs or process equipment...With this valuable feature, you are also sure of enduring accuracy and the high quality that characterizes all American Industrial Instruments.

American Glass, Dial and Recording Thermometers are sold by leading distributors everywhere. Write to them or to us for information.

AMERICAN
Industrial Instruments

A Product of
MANNING, MAXWELL & MOORE, INC.
BRIDGEPORT 2, CONNECTICUT

Makers of American Industrial Instruments, Hancock Valves, Ashcroft Gauges, Consolidated Safety and Relief Valves, Builders of "Show-Box" Cranes, "Budgit" and "Load Lifter" Hoists and other lifting specialties.

clues:

Turning the "Searchlight" on Opportunities

Published on space as available—approximately once a month. Rate—\$4.00 per line, minimum 3 lines—2 words for box number. Address replica c/o Business Week.

certified public accountant

- AVAILABLE FOR position of General Auditor or Controller. 18 years extensive accounting experience. Willing to do some traveling. Box 8772

administrative opportunity wanted

- ABLE ADMINISTRATOR, age forty, B.A. and L. L. B. degrees with successful background of insurance personnel and law. Currently employed at ten thousand a year, desires greater opportunity. Box 8871.

attention manufacturers

- ARE YOU seeking more business? Write us today for a new technique. Purchasing Advisory Guild, Woolworth Building, New York 7, N. Y.

One Man and a Mercury "Jeep"

DO THE JOB!



Take Over Handling In Large Food Warehouse

"Fits like a glove" into our handling operations. That's how this large food company describes the Mercury "Jeep." This modern, one-story warehouse, designed for maximum storage, enables the Mercury "Jeep" to utilize its compact size, power and easy maneuverability to the utmost. 2000 lb. pallet loads are tied to 18 foot heights...materials are handled, hauled and stacked with ease. All by one man and the Mercury "Jeep."

Learn how these economies can serve you. For on the spot consultation, ask a Mercury Sales Engineer to call.

FREE: NEW CATALOG NO. 7-11

52 pages illustrating and describing all Mercury equipment. Request your free copy on company letterhead, today.



MERCURY

THE MERCURY MANUFACTURING COMPANY
4146 South Halsted Street, Chicago 9, Illinois
TRACTORS • TRAILERS • LIFT TRUCKS

LABOR



UNION STRATEGISTS John Owens, John L. Lewis, and Thomas Kennedy plan . . .

U.M.W.'s Bargaining Day

Lewis' union isn't telling what it will ask for when soft-coal contract talks start. But shorter hours will probably head the list. Operators seek common ground for counter-strategy.

What will John L. Lewis ask for in 1949 soft-coal contract bargaining?

Unless United Mine Workers strategy changes, nobody will be sure of the answer until Lewis and the mine operators get together—in about two weeks. But you can get a pretty good idea of what the union wants from the trickle of news coming out of U.M.W.'s Washington offices. The union policy committee has held its annual contract parley with Lewis and his top strategy aids, and the clews are leaking out.

• **What U.M.W. Wants**—You can bank on one thing: There won't be any big surprises in the union's fourth-round demands. Here's what U.M.W. probably will ask for:

A shorter work day, probably a cut from eight hours to either seven or six. Many locals in soft-coal fields have asked U.M.W. to plump for the six-hour day; Lewis is reported to feel that a seven-hour day stands a better chance this year; that he would leave a further cut to future bargaining sessions. The union had a 35-hour week—and a seven-hour day—before the war.

Work stabilization, through "spread the work" programs designed to keep some mines from running full blast

while others stay idle (BW—Feb. 5 '49, p86).

A welfare fund boost, above the 20¢ a ton operators are now paying. Lewis would like to double the present tonnage levy; this would increase the take to about \$200-million a year. Lewis started with 5¢ a ton in the first contract, got the royalty doubled in each of the last two contracts.

Tighter safety laws, which Lewis says are necessary to cut an "appalling" mine death and injury rate.

More weekly pay, so that weekly take-home envelopes will be fuller even if miners work fewer hours a week. U.M.W. calls this a "dividend" for the miners' willingness to accept mechanization and to boost personal productivity.

U.M.W. hasn't indicated how much more weekly pay it wants. There are signs that it would forego this increase if operators would agree to cut the work week without cutting weekly pay.

• **Voted Down**—The policy committee winnowed these basic demands out of more than 1,000 contract proposals from soft-coal locals. Among the proposals the committee turned down were several for a guaranteed annual work pro-

gram (2,000 hours a year). Members agreed that such a plan wouldn't be feasible this year.

• **Operators Act**—Soft-coal contracts run through June 30. Southern coal operators, headed by Joseph E. Moody (BW—Apr. 9 '49, p104), already have served notice that they will consider the contract terminated on that day. And in a three-page letter to Lewis, the group emphasized that it doesn't think the industry can stand another increase in coal labor costs this year.

• **Operators' Strategy**—Meanwhile, operators were mapping out their 1949 bargaining strategy this week. Occasion was the annual meetings in Washington of the National Coal Assn. and the Southern Coal Producers' Assn. Several hundred operators came, but only a score gathered in the top-strategy session that took up the Lewis problem. Their big objective was to find a bargaining stand all could agree on.

A Strike at Ford?

Possibly. The U.A.W. local has been stirred up over the issue of assembly-line speed. But the big issue is still pensions.

The United Auto Workers (C.I.O.) is building up pressure on Ford Motor Co. in advance of a 1949 bargaining fight. The union's ultimate contract aim is a pension plan (BW—Mar. 5 '49, p92), but it has started its attack on Ford with another issue—assembly-line speed and production rates.

It may use the dispute over the line speed to force a crisis with the company—a crisis which will only be resolved by an agreement on pensions.

• **Strike Vote**—A dispute over the line speed moved into the critical stage last week when the union took a strike vote at the River Rouge plant. Of about 65,000 eligible to vote, 30,290 were for a strike, 4,400 against.

Under the Ford-U.A.W. contract, a dispute over assembly-line speed can be arbitrated if both parties agree. But if—as in this instance—the union doesn't want arbitration, it is free to strike. Tommy Thompson, president of Ford Local 600, has made it clear that he will not consent to arbitration.

• **What's at Stake**—The issue behind the issue—control over assembly-line speed—is a fundamental concern in all mass-production industries.

Management figures it must have the final say, including the right to make short-time revision in production rates as day-by-day operations require them. It argues that this right is necessary for well-balanced and profitable operation. An auto assembly line, for instance, is a

A Tough Fabricating Job

Yields To Allied's Triple-Plant Production Facilities



The fabricating of the structural steel for this Field House was greatly facilitated by distributing the work in the three Allied plants. All duplicate sections, such as columns, were fabricated in one shop; the trusses in another shop; the purlins and bracing in all three shops. Allied crews, serving on tough jobs, give visible evidence of their dexterity in the expertly fabricated members arriving at erection sites on due dates.



The columns, weighing 37 tons each, illustrated in the foreground, were built up of several members. Total tonnage in the building, 3200 tons.



The trusses are so long and heavy that they could not be assembled on the ground . . . they had to be assembled in place.



Why push a hand mower when you can drive a "Moto-Mower" build-ers of quality power mowers for thirty years ... write for information for your home, plant, an institution, or if you sell power mowers ... "MOTO-MOWER" is worth insisting upon ... sizes 20" to 71"



Life may begin at forty—but your lawn mower pushing days should end...it's time to drive the "MOTO-MOWER"
best lawnmower name in power lawn mowers for thirty years



MOTO-MOWER
4424 Woodward Detroit 1 Company
EST. 1919

THERE'S NO CARBON PAPER LIKE "PARK LANE!"

THAT'S BECAUSE IT'S MADE BY ROYTYPE!

Non-curl! Non-slip! Non-smudge! That's Park Lane, the carbon paper that is specially treated to give better copies, cleaner copies.

Get in a supply today! See the difference in the quality of the work turned out in your office!

Made by Roytype, division of Royal Typewriter Company, Inc.—world's largest manufacturer of typewriters!



THERE'S A ROYTYPE PRODUCT FOR EVERY BUSINESS MACHINE NEED!

complex, highly-synchronized, many-branched operation. A lot of planning must go into the problem of getting the various parts together at the right place at precisely the right time.

Unions, on the other hand, are universally suspicious of anything that makes an assembly line move faster. To them, it's a "speed up" designed to make workers move faster and maybe cut out some jobs (page 104).

• **Uneven Flow**—The Ford assembly-line speed at River Rouge calls for production of 240 finished cars each eight-hour work day. The company's production engineers worked out the schedule, which was later considered and approved by U.A.W. technicians.

The present dispute arises, according to the union, because parts haven't been moving steadily enough to keep the assembly line going at the set pace. It slows down at times, and then operates at about 105% of "capacity" to compensate for the lost production. The union doesn't object to the slowdown, but it protests that the fast operation which follows breaks its agreement on a "human" assembly-line speed.

• **Matter of Principle**—Ordinarily, disputes such as this one don't amount to very much. Some compromise is worked out. But in this case both company and union see the dispute as more than a routine grievance; they consider it a matter of principle.

A month ago, it seemed unlikely that the Ford dispute would come to a head before the present contract expires July 15; in short, a long negotiating wrangle over pensions and other union demands would come first. Now, it is admitted that a strike might come over the assembly-line issue.

• **For a Strike**—Here's why:

Intense militancy is widespread among the workers at River Rouge. The local union paper is working members up to a state of outrage over the line-speed issue (BW—Nov. 6 '48, p107). The pressed-steel plant workers, in particular, have been talking daily about strike action; other groups have been, too. So, even if U.A.W. top-level strategy doesn't have any place for a Ford strike now, one might still occur. With workers keyed up for strike action, leaders might find it hard to restrain them.

Left-wing elements have forced the speed-up issue, first brought up months ago. They got action by accusing Thompson of "condoning" faster assembly-line speeds, by harping away on right-wing "inaction." The leftists generally favor a strike. If a walkout should bring substantial gains, the leftists think they can cop the credit for forcing the strike; if not, they figure they have a lot to gain by blaming Walter Reuther and his right-wing aides for settling without notable gains. So, think the leftists, they have everything to gain, little to lose.



FORD UNION HEAD Tommy Thompson is pinched between U.A.W. right and left

This is important because, while they do not control Ford Local 600, they have always been strong there and conceivably could start an unauthorized walkout, even if national U.A.W. opposes one.

Shaky auto sales worry the industry, and the union knows it. Currently, the spring car-selling season is just getting under way. The seasonal edge will likely be gone from the market by July 15, when the Ford contract expires. Hence, the union might consider this the strategic time for a walkout.

• **Against a Strike**—These are significant factors. But they aren't the only ones bearing on the chance of a strike. Here are some equally significant factors working against a strike:

The spring market is at hand, which makes the company want to stay in production. It may therefore be willing to concede now on the line-speed issue in order to get its share of the big seasonal business.

Top strategy of U.A.W. is still aimed at pensions in 1949; production-line speed is not a major consideration. If a strike occurs, potential pension advances might have to be sacrificed.

A long strike could ensue if Ford chose to fight now. If so, the whole U.A.W. 1949 bargaining drive might totter all along the line.

Ford delegates to the national council meeting this week in Detroit hashed over these and other arguments between presentations of the 1949 demands to be made on the company. The U.A.W. program, as outlined to the group, was hardly a new one; it called for \$100 a month pensions at 60, broadened social security benefits, and wage raises. Ability to pay, U.A.W. staff people told the delegates, justifies these demands.



TALK TO INDIVIDUALS
A MILE OR MORE AWAY

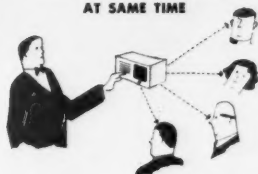
ENJOY PRIVACY
WITH
EARPHONE MODEL



Perfect tone quality!

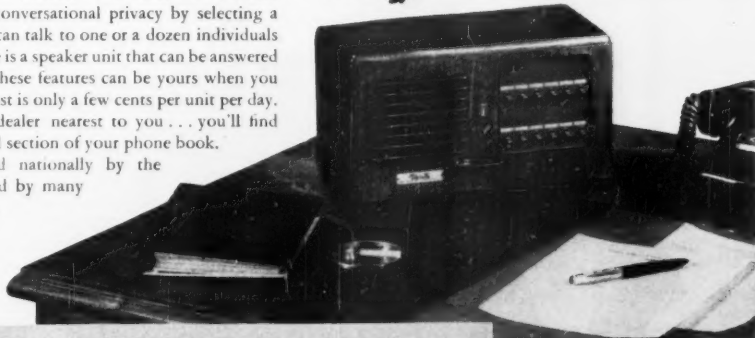
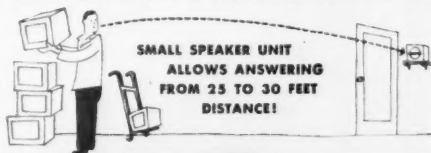
YOU KNOW WHO IS CALLING

TALK TO ONE OR A DOZEN
AT SAME TIME



Tone quality is an outstanding feature of "Teletalk"... for you can readily distinguish the voice of the person calling. This natural tone makes it pleasant to use and adds to its effectiveness by enabling you to hear every tone inflection. This naturalness of tone is further proof of quality construction, as it can not be obtained without it.

Further, you can talk by "Teletalk" over distances of a mile or more; you can have conversational privacy by selecting a unit with earphone; you can talk to one or a dozen individuals at one time. Also available is a speaker unit that can be answered from across a room. All these features can be yours when you install "Teletalk." The cost is only a few cents per unit per day. Contact the "Teletalk" dealer nearest to you... you'll find him listed in the classified section of your phone book. "Teletalk" is distributed nationally by the Graybar organization and by many independent distributors.



**WEBSTER
RACINE**

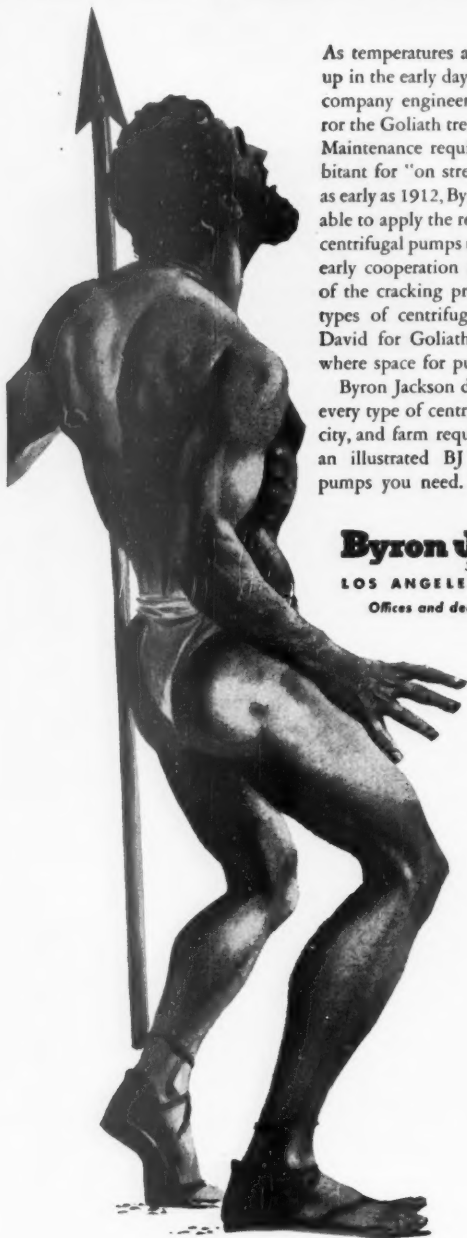


**ELECTRIC
WISCONSIN**

Established 1908

Export Dept., 13 E. 40th St., New York 16, N. Y. Cable Address "ARLAB" N. Y. City
"Where Quality is a Responsibility and Fair Dealing an Obligation"

BORROWING THE DAVID AND GOLIATH IDEA



As temperatures and pressures went up and up in the early days of petroleum refining, oil company engineers contemplated with horror the Goliath trend in reciprocating pumps. Maintenance requirements alone were exorbitant for "on stream" conditions. Called in as early as 1912, Byron Jackson engineers were able to apply the relatively new advantages of centrifugal pumps to petroleum research. This early cooperation speeded the development of the cracking processes. Pioneers in many types of centrifugal pumps, BJ exchanged David for Goliath in refinery pumping... where space for pumps is at a premium.

Byron Jackson designs, builds, and installs every type of centrifugal pump for industrial, city, and farm requirements. Write today for an illustrated BJ Bulletin describing the pumps you need.

Byron Jackson Co.
Since 1872
LOS ANGELES 54, CALIFORNIA
Offices and dealers in principal cities

BJ
built-to-last
pumps

Pump Division
Oil Tool Division
BJ Service Division
Patterson-Ballagh Division

PLANT LOCATIONS:

Los Angeles, California
Houston, Texas
Bethlehem, Pennsylvania
Fresno, California

Byron Jackson Co. manufactures centrifugal pumps, oil well tools, oil field specialties, and performs many technical oil field services.



PUTTING THE QUESTION to its employees eases Dow management's path, gives workers helpful...

Time-Study Tips

Management turns to time studies to cut costs in stiffer competition. First step: win over employees.

Nobody likes time and motion studies—but, like death and taxes, they are hard to avoid.

That's the theme of a booklet that the Dow Chemical Co. hands out to employees whenever a time study is coming up. And it's a message that a lot of other employers are trying to put over right now. Some are succeeding. But a wave of wildcat walkouts, slowdowns, and disputes over work loads indicate that others are not.

• **Conference**—Many of the country's top companies clearly showed their concern over better production techniques last week end. Eight hundred executives traipsed to New York City to a Time Study & Methods Conference. All were asking the same question: How can we cut labor and production costs?

They heard a succession of speakers cite savings of as much as 25% in production costs without cutting wages—by integrated time and motion studies and material and cost controls. But they also heard that it takes some advance spadework to put such a program over. You have to overcome the suspicions and fears of workers first.

• **How Dow Does It**—One way is to tell workers beforehand why time and motion studies are necessary—and how both employer and employees stand to benefit from them. That's what the Dow

Chemical booklet aims to do. Copyrighted in 1946, it's an attractive publication, illustrated with cartoons, and easy to read. The booklet is now a standard part of every time or motion study project the company undertakes.

It has paved the way for some changes that otherwise might have had some rough going.

Dow's booklet makes the point that a plant has to have time and motion studies in order to insure operating efficiency—which means profitable production in a competitive market. The booklet emphasizes that employees benefit because: (1) the studies make worker's job more secure; (2) they put an end to one man's boondoggling that is making a fellow worker's job harder; and (3) they often simplify work methods and cut causes of industrial fatigue.

The booklet also briefs workers on what to do when a time-study or motion-study man comes around. Above all, it says, don't worry or get the dander up because a guy is holding a stop watch on work methods. Work at normal speed—don't speed up to make a good showing. Follow standard procedure: if it's wrong, steps will be taken to correct the method and everyone will benefit. If you skip a routine step, or do something extra while the check is going on, report it; don't keep mum and find out later that you have to file a grievance to correct the job standard.

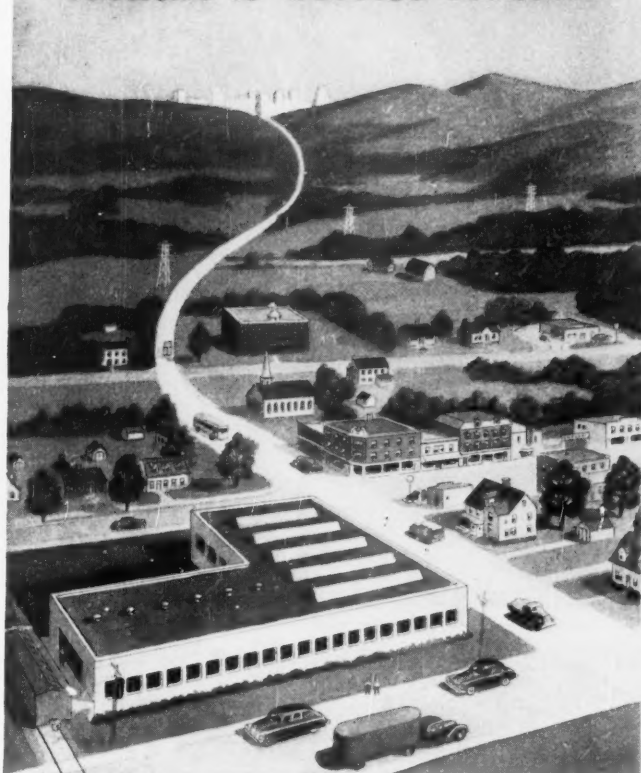
• **Workers Help**—Another way to beat down resistance to time studies is to let the workers help make them. The usual way is to have the union name a time-study man to work with those employed by management. Sometimes it's practical to choose and train plant workers to do the time-study job. The Apex Electrical Mfg. Co., among others, has done this (BW—Oct. 26 '46, p. 102). It found that the practice netted an almost 100% acceptance of standards set by the time-study crew. The few disagreements that did arise were settled easily—and to the satisfaction of everyone.

• **Union Check**—The Bemis Bro. Bag Co. and Textile Workers Union of America (C.I.O.) work out time standards and work loads together. Management proposes the standards; the union's time-study technicians look them over and suggest any revisions they want. Any dispute goes through regular grievance channels, to final arbitration.

Another T.W.U.A. contract, a new one with American Enka Corp., gives union engineers the right to check company-set standards.

• **Arbitration**—Another recent contract, between Johns-Manville Corp. and A.F.L.'s Paper Workers, takes a different tack: It provides that in disputed cases, a job evaluation engineer acceptable to both company and union will "arbitrate" the validity of job standards.

Within a Stone's Throw



Within easy distance of important distribution points, scores of thriving North Carolina communities eagerly await their first industrial payroll.

Here, in Nature's Land of Plenty, where workers prefer to use their skills in industries near home, are cities equipped to supply, promptly and expertly, materials, replacements, and services.

If you have been thinking of a plant site in an uncrowded area without the disadvantage of being isolated from major distribution points—then think of North Carolina! Let one of our engineers supply more specific information. Write Div. MI-45, Department of Conservation and Development, Raleigh, North Carolina.

Come to **North Carolina**

CONDITIONED BY NATURE FOR INDUSTRIAL PROFIT

MOUNTAIN

PIEDMONT

COASTAL



Mail Math!

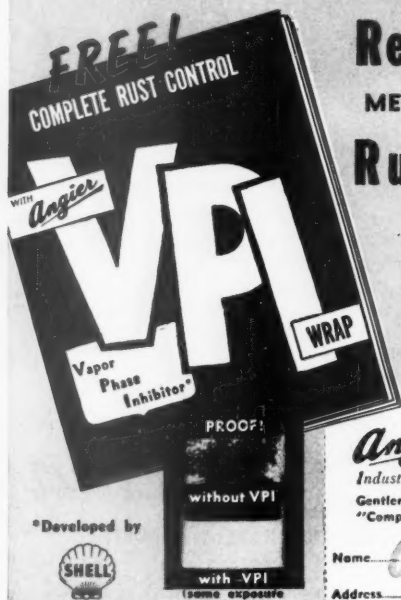
...can be costly when postage is overpaid, embarrassing when underpaid...and no problem at all when an office has a PB mailing scale!... Automatic pendulum mechanism weighs exactly—fast!... prevents embarrassing "Postage Due" letters from getting through, saves wasteful overpayment of postage... The wide-spaced markings show precise postage necessary at a glance... And the PB scale is built to last for years!... Also available: a 70 lb. Parcel Post model... Write for illustrated booklet and free chart of new postal rates...



**PITNEY-BOWES
Mailing Scales**

PITNEY-BOWES, INC.
1487 Pacific St., Stamford, Conn.
*Originators of the postage meter
... offices in 93 cities.*

New 12 Page Booklet Gives All the Facts . . .



Revolutionary METHOD OF COMPLETE Rust Control

- Outperforms other methods!
- Eliminates slushing in oil!
- Clean — simple to use!
- Angier VPI even answers rust problems never before solved!
- **COSTS LESS** in time and materials, as it prevents rust!

Angier CORPORATION
FRAMINGHAM 7, MASS.

Industrial Packaging Engineers Since 1895
Gentlemen: Please send **FREE 12 page booklet**,
"Complete Rust Control with Angier VPI Wrap".

Name *Get Your*
Address *Copy Now!*
City & State

Attack on Bias

Employers' voluntary plan in Cleveland heads off city law to enforce unbiased hiring of minority groups.

Should job rights of racial minorities be protected by law—or can they be guaranteed through the voluntary efforts of industry, labor, and the public?

• **Cleveland Plan**—In Cleveland a three-month-old voluntary plan for fair employment practices has developed some evidence. Business and industry set up the program to show that racial discrimination in hiring practices can be eliminated without new laws. Results so far have been significant. But they haven't checked a union drive for a law barring job discrimination in Ohio.

Filibustering southerners forced Congress to shelve proposals for a federal fair-employment-practices act until later this year or 1950. But the fair-employment-practices debate has been loud and heated in many state capitols. Bills to guarantee job rights of minorities have come up in 15 state legislatures this year. Four states—New Mexico, Oregon, Rhode Island, and Washington—have put new laws on their books. Sponsors of anti-job discrimination bills are confident of victory in at least three other legislatures.

• **Pro and Con**—In most of the debates on these bills, industry spokesmen have agreed that there is room for improvement in hiring policies. But they argued that the job could be done without the red tape and enforcement problems in a new law. Many of them cited the Cleveland experiment to back up their views.

Union representatives, on the other hand, supported in most cases by state administrations, plugged for enforceable laws. They argued that there has been plenty of time to set up voluntary fair-employment-practices programs, but that very little has been done. Even in Cleveland, they said, there had to be the threat of city and state laws before the voluntary plan came into being.

• **Beginnings**—The voluntary plan was suggested last December by William L. Ong, assistant to the president of American Steel & Wire Co. At the time, Cleveland's city council was considering an ordinance to bar job discrimination in the city. A similar proposal had been voted down in 1947, but passage this time seemed certain.

The Cleveland Chamber of Commerce opposes any fair-employment-practices law—city, state, or federal. Faced with a possible municipal law, the chamber swung into action behind the Ong proposal. It got the council to

hold up action for 90 days to give voluntary methods a chance to work. Then the chamber and Cleveland's Mayor Thomas Burke each named eight members to a committee on employment practices. It went to work officially Dec. 15, 1948, wasted no time tackling ways to end racial discrimination in hiring.

• **Steps**—First step was an educational program aimed at major Cleveland employers. The committee mailed to 8,200 employers three pieces of literature. The first explained the voluntary plan, and asked for cooperation. The second suggested specific steps management should take to end discrimination in hiring. The third was an educational manual, "How to Apply Cooperative Employment Practices."

The original mailing brought pledges of cooperation from 150 companies, employing 150,000 people. Committee members then scheduled personal interviews and meetings with top management men of companies that hadn't replied. The committee thus "sold" the idea of voluntary action to employers who had held back at first.

• **Committees**—With the program under way, the group named industry committees to work on 21 different phases of the anti-job-discrimination program. Company presidents, or their equivalents, manned each committee. This saved time, since company heads didn't have to report back to higherups before putting a program into effect. It also made it easier to channel anti-job-discrimination information to supervisors and bench or desk workers.

Meanwhile, the committee began telling its story to the general public—with bus and streetcar cards, posters, shop-window cards, and public speakers. The committee set up a bureau to supply speakers for all sorts of civic, church, and club gatherings.

For the practical job at hand, the committee formed a subcommittee to handle complaints of discrimination. The group also works with agencies that place minority-group members in jobs.

• **Results**—The 90-day test period set by the city council ran out early this month. The committee had some definite progress to report to Mayor Burke.

For instance, one Cleveland advertising agency had agreed to end its old racial bars in hiring. It had employed a stenographer, a proofreader, and an accountant from minority-group applicants.

Five Negro girls were placed in jobs as receptionists—work formerly restricted to white applicants. A Negro was upgraded to a staff job that he had been entitled to before, but couldn't get because of his race. Several large companies hired Negro clerical help for the first time. And a Negro Ph.D., employed as a chemist, finally got a chance to step into a job with responsibility



He gets better milk— from the same cow

Sounds like magic—but the fieldman from your dairy does it every day by helping the farmers who produce the milk. He must be a combination agricultural engineer, buyer, salesman, public relations man and friend. His job is big and important because dairy products are one-third of the nation's food supply.

Pennsalt, one of the leading manufacturers of dairy sanitation chemicals, is giving him an extra hand! Pennsalt has initiated a strong promotion campaign to tell the farmers the dollar-and-sense reasons for self-enforced dairy sanitation . . . using B-K*Chlorine-Bearing Powder, General Manual Kleanser and Lewis* Lye. These quality, dairy chemical

products are Pennsalt's contribution to better milk for you.

This is but one example of Pennsalt Chemicals at work. In agriculture, in industry and in the home, hundreds of Pennsalt chemicals teamed with the ingenuity of Pennsalt engineering service, are helping to make things better, brighter, cleaner, healthier, more abundant. They may be able to solve a problem of yours. A word from you puts almost 100 years of chemical experience at your disposal. Write: Pennsylvania Salt Manufacturing Company, 1000 Widener Bldg., Philadelphia 7, Pa.

REG. U.S. PAT. OFF.



PROGRESSIVE CHEMISTRY FOR 99 YEARS



RAYONIER
INCORPORATED

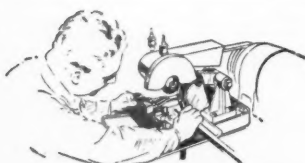


PRODUCER
OF HIGHLY
PURIFIED
WOOD
CELLULOSE

The Board of Directors has declared a regular quarterly dividend of fifty cents (50¢) per share on the Common Stock, payable May 13, 1949, to stockholders of record at the close of business April 29, 1949.

EDWARD BARTSCH
President

April 5, 1949



9 CHANCES OUT OF 10 YOU HAVEN'T THOUGHT OF THIS PROVED WAY TO CUT COSTS

Modern abrasive cutting with Allison Wheels is so much faster and so much more accurate than previous methods that the savings can be very substantial indeed. Write, wire or phone for an Allison Abrasive Cutting Expert to tell you about these modern cutting wheels and methods that have opened new cost-cutting opportunities. He'll give facts and figures you can use right now.

FREE ON REQUEST

Send today for the facts on Allison Abrasive Cutting Wheels. The Allison Company, 262 Island Brook Avenue, Bridgeport 8, Connecticut.

Allison
ABRASIVE CUTTING WHEELS

where he could put to use his research training.

There were other gains, too. Department stores, food stores, and banks began to employ Negro workers in responsible jobs where they could be seen.

• **Bill Sidelined**—The city council shelved its plan for a city fair-employment-practices ordinance after it got the report. But the committee's 90-day success wasn't the only reason. A state fair-employment-practices bill was making real headway in the Ohio legislature. If it should pass, there would be no need for a city ordinance, or a voluntary plan, for that matter.

Labor advocates of the state law have, from the start, viewed the Cleveland voluntary plan with rank skepticism. They say it's all right—for those willing to cooperate. But, they maintain, there's nothing to force compliance by others.

Moreover, union spokesmen have charged that the voluntary program is just a dodge to halt passage of a state anti-job-discrimination law.

As a matter of fact, the Cleveland voluntary program has worked the other way around: It has helped the campaign for the state law by publicizing the equal-opportunity problem.

• **Laws**—Cleveland's program had to be set up without a pattern. Other city programs have relied on municipal laws. Chicago, Milwaukee, and Minneapolis ordinances, for instance, provide for fair-employment commissions with limited power to enforce unbiased hiring.

Up to this year, four states had fair-employment-practices laws with enforcement teeth. They were New York (which pioneered anti-job-discrimination laws), New Jersey, Massachusetts, and Connecticut.

What's Happening to the Cost of Living

	Food	Clothing	Rent	Gas & Electricity	Other Fuels	Ice	House Furnishings	Misc.	Total Cost of Living
August, 1939	93.5	100.3	104.3	99.0		96.3	100.6	100.0	98.6
January, 1941*	97.8	100.7	105.0	97.4		104.2	100.1	101.9	100.8
March, 1941	98.4	102.1	105.1	97.3		104.2	101.6	101.9	101.2
March, 1942	118.6	123.6	108.9	96.7		112.1	121.2	110.1	114.3
March, 1943	137.4	127.6	108.0	96.2		118.3	124.5	114.5	122.8
March, 1944	134.1	136.7	108.1	96.0		123.5	129.0	119.1	123.8
March, 1945	135.9	143.7	108.3	95.5		124.1	144.5	123.6	126.8
March, 1946	140.1	153.1	108.0	92.9		127.7	150.2	125.9	130.2
March, 1947	189.5	184.3	109.0	92.2		142.5	182.3	138.2	156.3
March, 1948	202.3	196.3	116.3	93.8	175.5	132.2	194.9	146.2	166.9
April	207.9	196.4	116.3	93.9	176.1	133.2	194.7	147.8	169.3
May	210.9	197.5	116.7	94.1	178.5	133.7	193.6	147.5	170.5
June	214.1	196.9	117.0	94.2	180.6	134.2	194.8	147.5	171.7
July	216.8	197.1	117.3	94.4	185.0	136.5	195.9	150.8	173.7
August	216.6	199.7	117.7	94.5	190.1	137.3	196.3	152.4	174.5
September	215.2	201.0	118.5	94.6	191.0	137.6	198.1	152.7	174.5
October	211.5	201.6	118.7	95.4	191.4	137.9	198.8	153.7	173.6
November	207.5	201.4	118.8	95.4	191.6	138.0	198.7	153.9	172.2
December	205.0	200.4	119.5	95.3	191.3	138.4	198.6	154.0	171.4
January, 1949	204.8	196.5	119.7	95.5	191.8	139.0	196.5	154.1	170.9
February	199.7	195.1	119.9	96.1	192.6	140.0	195.6	154.1	169.0
March, 1949	201.6	193.9	120.1	96.1	192.5	140.4	193.8	154.4	169.5

* Base month NWLB's "Little Steel" formula. † Ice grouped with "other fuels" prior to June, 1948. Data: U. S. Bureau of Labor Statistics: 1935-39 = 100.

Cost of Living Turns Up

Food prices push against downward pressures to lift index half a point. Unions see support for fourth-round wage boost.

The consumers' price index of the Bureau of Labor Statistics ended a five-month downtrend in the month ended Mar. 15. On that date, according to BLS, living costs were 169.5% of the 1935-39 average. This is a half point higher than the 169.0 reported for the previous month (BW—Mar. 26 '49, p108).

• **Food Factor**—The shift upward in a single monthly figure isn't to be taken

too seriously. It represents a seasonal change, caused mainly by an expected increase in the cost of food. More significantly, the half point rise indicates that the strong downward pressure in clothing and house furnishings at this time isn't enough to offset the upward pressure of food prices.

• **Point for Unions**—But the change is sure to be a factor in coming union wage

demands. The unions have been arguing that living costs have been dropping too little to justify foregoing a fourth-round pay boost. They are sure to point to the current figure to support their claim that the c.-of-l. isn't going down steadily.

While the c.-of-l. rise will have some impact on 1949 wage talks, it won't have any immediate bearing on General Motors wages. The next G.M. wage adjustment under its contract with the United Auto Workers (C.I.O.) will be based on the Apr. 15 index figure. When the c.-of-l. dropped below 171.5 on Jan. 15 (actual index figure: 170.9), G.M. workers from 11 St. Regis plants have shelved sharp drop to 169.0 by mid-February would have cost the workers another 2¢-an-hour if it had stuck until Apr. 15. The mid-March rise knocked 1¢ off that "paper" pay cut—at least temporarily. What the adjustment really will amount to won't be known until late May, when the Apr. 15 BLS figure comes out.

LABOR BRIEFS

Non-Communist affidavits by employers are called for by a bill introduced in the Senate this week by Republican Alexander Wiley.

St. Regis Paper won't have to worry about wage demands unless business picks up this year. A.F.L. union leaders from 11 St. Regis plants have shelved demands for a 15¢ hourly hike. There's a 60-day reopening clause.

Warehouse workers, members of Harry Bridges' I.L.W.U. (C.I.O.), want a 15¢ wage increase from West Coast warehouse operators.

A 35-hour week, if work slacks off, is part of the seniority clause in a new contract between Purolator Products and International Assn. of Machinists. Whenever a reduction of forces is necessary, the work week will first be cut to 35 hr. to spread work.

Bonus payments given employees regularly over a substantial period must be considered as part of the regular hourly rate of pay when you figure overtime payments under the wage-hour act. The Supreme Court has refused for the third time to upset this rule.

The Pictures—Arnold Eagle—22, 23; Int. News—22 (top), 100, 110; Bob Iscar—88, 90, 91; © Karsh—97; Keystone—120; Wide World—25, 67 (l.); Ida Wyman—102.

"We changed ORDER FILLING from a SNAG to a SNAP

with UARCO combined forms"

All these have to be typed before an order can be processed: greeting card, three Railway Express forms, invoice, office record, bookkeeping copy. Typed separately, they were the snag in the business.

Now they're a snap—UARCO combines them all into one set! No shuffling of papers . . . no carbon mess . . . the typist has only to type. And she types 500 orders with only one insertion in the typewriter!

The savings? Tremendous! Yet they're only typical of what UARCO does for business. You can make similar savings, no matter what kind of business you're in, no matter how large or small.

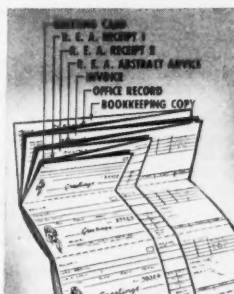
Call your UARCO Representative for a complete survey. No obligation.

UARCO INCORPORATED
Chicago, Ill.; Cleveland, Ohio; Oakland, Cal.;
Deep River, Conn.
Offices in all principal cities



Business Forms

Serving Business for More than Fifty Years



Here it is . . . the UARCO Manifold Form that gets orders out in minutes' time. This complete set produces seven copies in one writing—each different from the other in size, color, even subject material. Consecutively numbered for accurate control, the sets are in continuous strips to feed continuously into typewriter or business machine.



CONTINUOUS STRIP FORMS
FOR TYPEWRITTEN AND BUSINESS MACHINE RECORDS



SINGLE SET FORMS



AUTOGRAPHIC REGISTERS
AND REGISTER FORMS

From

RADIO CITY

To

PUGET SOUND

Dunham Vari-Vac® Differential Heating provides the precise amount of heat you want . . . throughout the day and throughout the season . . . in any climate.

Utilizing a continuous flow of steam at temperatures that vary with the weather and the needs of the building occupants, this remarkable system cuts fuel bills as much as 40%.

Once restricted to large structures like Radio City in New York or the United Exchange Building in Seattle, Dunham Vari-Vac Differential Heating has recently been "job-scaled" to fit any size installation or budget.

FREE BOOKLET NO. 509 gives you complete information on Vari-Vac. Other bulletins describe Dunham Convectors, Baseboard Radiation, Unit Heaters, Traps, Valves and Pumps. Write today. C. A. Dunham Co., 400 W. Madison St., Chicago 6, Ill.

*Variable Vacuum

**DUNHAM
DIFFERENTIAL HEATING**

**cuts fuel costs
up to 40%**

DUNHAM

HEATING MEANS BETTER HEATING

Workers' Likes Reveal Gripes

General Motors hid its real purpose in asking employees what they like about G.M. It analyzed the omissions to find what's wrong. Study is the base for new employee-relations programs.

By playing a "Why I Like My Job" contest in reverse, General Motors Corp. has dropped an atomic bomb in employee relations. What G.M. has actually done is find out what workers don't like about their jobs.

The technique that G.M. used to find this out—and to break the data down by divisions and plants—has psychologists agog.

• **Project**—It all started in 1947 with what appeared to be a routine contest on a large scale (BW—Dec. 20 '47, p. 21). But G.M. put the 175,000 letters it received to interesting use: In adding up the answers to "Why I Like My Job," G.M. worked on the theory that the things left out or touched on lightly are the things that may need fixing.

Here's a hypothetical case to illustrate the point: Say that only 10% of the entrants in one division give good lighting as a reason for liking their jobs. If the G.M. over-all average is 15%, it looks as though the division has some work to do on its lighting.

• **Breakdown**—The 175,000 letters produced some 1,250,000 individual reasons why the writers like their jobs, an average of about 7½ reasons per letter. Every one of these reasons has been classified in 58 fairly specific categories. All letters have now been analyzed and broken down into these categories, then transferred to International Business Machines punched cards—along with various data about the employee, such as sex, age, length of service, and job.

By running the cards through I.B.M. machines, any classification can be automatically sorted out. To date, volumes and volumes of conclusions have been worked out: the G.M. Employee Relations Staff has spent most of the past 18 months developing them. And many more remain to be done.

• **Likes**—Liking the boss is way out ahead of all other reasons G.M. people gave for liking their jobs. It got a mention from nearly 48% of the entrants.

Next came, in order: (1) the worker's associates; (2) wages; (3) the character of the work; and (4) pride in the company.

Down toward the bottom were such reasons as: (1) the success achieved by the employee; (2) the parties and open houses sponsored by the management; (3) pride in building a good product.

• **Studies**—These results were all collated by a specially trained staff in G.M. The comparisons then began—divisions against the corporation average, plants

within major divisions against each other, men against women, one age and seniority group against another, etc.

Studies of fairly major scope were undertaken at such universities as Columbia, Chicago, Wayne, Purdue, Minnesota, Michigan. Less formal inquiries are going on at many other points, most of them independent of the G.M. project itself, some tied in with it.

• **Interest**—Beyond that, the inquiry has had psychologists around the country fairly drooling: 175,000 tabulated attitudes is a rich vein to mine. Opinion analysts have also been interested in the flood of findings pouring out of the classifying machines.

As the basic results were completed statisticians applied formulas to find a



Creating Atomic Board

William H. Davis (center) this week knuckled down to a new job: chairman of a newly formed Atomic Labor Relations Board. He was named by the President, who acted quickly on recommendations of an advisory commission headed by Davis (BW—Apr. 23 '49, p. 108). The new ALRB will have two more members, not yet named at midweek. Davis is being assisted in setting up the new program by John T. Dunlop (left), Harvard professor, and Donald D. Straus (right), New York, administrative director of the commission.

middleground for each "MJC" (My Joy Contest) reason. This established a statistical mean for the corporation as a whole.

• **Explanations**—Divisions which rated higher than the corporation average in any category were asked how they did it. Divisions rating lower were also asked to explain.

This sometimes turned up unexpected replies. One division had a low average on mentions of safety; in fact, it was almost at the bottom of the corporate list. Its manager explained that the plant is nearly foolproof insofar as accidents are concerned; his safety records backed him up. For that reason, he pointed out, safety measures get no play on bulletin boards or in plant newspapers. He figured his people failed to include it as a reason for liking their jobs simply because they had neglected to consider it.

• **Response**—In other instances, a division's bottom rating has been a spur. Good hospital facilities accounted for a small but respectable percentage of the like-my-job reasons. One manager, whose division placed in the cellar, puzzled for a while, came up with this reply:

"We always took the attitude that our medical facilities were strictly for handling accidents, nothing more. But if all G.M. employees think as highly of hospital facilities as the study shows... we'd better get busy."

So his division's hospital facilities were immediately marked for expansion.

Another division, having grown considerably, last year discontinued an annual Christmas party of years' standing; the management felt the size of the crowd would make it too unwieldy. When the returns were completed, it was found that a greater-than-average number of entrants in this division put it down in the contest. So management put it back on the schedule.

Divisions rating above the corporation average have passed along their observations to the others for study and improvement.

• **Programs**—The implications in the studies being made have led to several industrial-relations programs within the corporation. It was established fairly clearly that workers liked to get information about their jobs, their environment, and the world in general. One result: the creation of employee-information racks (BW—Feb. 5 '49, p91) from which workers can help themselves to pamphlets and booklets.

G.M. doesn't fool itself about the definitive value of MJC averages. It is satisfied that many of the submitted papers were influenced by the desire to win a prize—by writing things the judges might like to read. Consequently, there is no attempt to read into the findings any conclusion that Reason A is twice or

IT'S VERMINPROOF!

That is one of the main reasons why PC Foamglas is permanent insulation



This is FOAMGLAS®

The entire strong, rigid block is composed of millions of sealed glass bubbles. They form a continuous structure, so no air, vapor or fumes can get into or through the Foamglas block. In those closed glass cells, which contain inert air, lies the secret of the material's permanent insulating efficiency.



• Termites, other destructive insects and vermin just can't eat Foamglas. They can't gnaw through it. They can't nest or breed in it. It's verminproof.

And thus, one of the common causes of insulating material failure is eliminated when you insulate walls, floors, roofs and ceilings with PC Foamglas.

PC Foamglas is a true glass. Consequently, Foamglas insulation is also vaporproof, fireproof, fumeproof, acidproof. These are additional reasons why, when installed according to our specifications for recommended applications, PC Foamglas retains its original insulating efficiency permanently.

So, when you want a permanent insulating material that helps to maintain

desired temperatures and reduce condensation, that withstands humidity and forms a vapor seal, for normal or low temperature applications, find out about Foamglas.

Check and mail the coupon below... and we'll be glad to send you free the Foamglas booklets you select.

Pittsburgh Corning Corporation
Dept. G-49, 307 Fourth Ave.,
Pittsburgh 22, Pa.

Please send me, without obligation, your FREE booklets on the use of PC Foamglas insulation as checked below:

Normal Temperature: ☐ Roofs ☐ Walls ☐ Floors
☐ Refrigerated structures

Name: _____

Address: _____

City: _____ State: _____



FOAMGLAS INSULATION

When you insulate with FOAMGLAS... you insulate for good!

Can you MATCH THESE SAVINGS in your Plant?

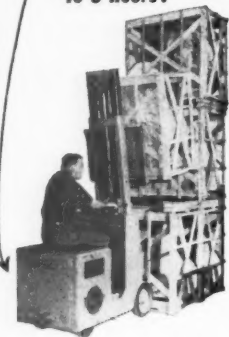
With
**BAKER
TRUCKS**

**1 to 1½ hour job costing \$25 per hour —
cut to 15 minutes!**



Loading a 50 KW transformer onto a highway truck formerly took a crew of linemen 1 to 1½ hours at an estimated cost of \$25 per hour. On its first day of service, the Baker FQH (low-cost, light-weight) Fork Truck, with one operator, did the job in 15 minutes.

**8 hour unloading job cut
to 3 hours!**



The same Baker Truck unloaded and tiered a car of 74 crated electric appliances, weighing 275 lbs. each, in 3 hours. This job formerly took 3 men 8 hours.

*Up to 2000 lbs. with the Baker FRH

Typical of the savings possible with a low-cost, light-weight BAKER FQH Fork Truck are these made by a prominent Southern utility. In addition to the operations illustrated, the truck is used for unloading, warehouse handling and loading of a complete line of major appliances, coils of wire, insulators, pole line hardware, etc. The truck will also be used for handling transformers between the warehouse and a transformer storage and testing shop to be erected. It is estimated that this truck will pay for itself in savings within 18 months.

Wherever space is at a premium and loads vary from 100 to 1500 lbs.,* the Baker FQH Fork Truck is the ideal handling unit. Its low-cost, light-weight and extreme maneuverability permit its use for many applications where heavier, costlier equipment is impracticable. Write for complete information, or contact your nearest Baker representative.

BAKER INDUSTRIAL TRUCK DIVISION
of The Baker-Raulang Co.
1204 WEST 80th STREET • CLEVELAND, OHIO
In Canada: Railway & Power Engineering Corp., Ltd.

Baker INDUSTRIAL TRUCKS

three times as important as Reason B.
• **Caution**—The beauty of the study from the psychological standpoint, of course, is that the letter-writers joined the contest voluntarily, wrote of things they liked. Asked about the negative aspects, they might have been suspicious, irritated—or even flattered. The absence of those elements gives the whole study an authentic air on which G.M. is banking highly. The conclusions reached from it are having, and will have, a broad effect in shaping G.M. employee-relations policies.

Pension Ruling

Supreme Court rules in Inland Steel case that employers must bargain on retirement plans if union demands it.

If a union demands it, an employer in interstate commerce must bargain on pension and retirement plans. These issues are now among the legitimate ones in the contract relations between labor and management.

• **Inland Steel**—The U.S. Supreme Court so ruled, in effect, this week by refusing to review a lower court decision in the Inland Steel Co. case (BW-Oct. 27-48,p94).

The ruling applies to any employer who ships or buys goods across state lines, when: (1) a union that represents his employees asks during contract talks to bargain on pensions, and (2) the union is qualified, under Taft-Hartley, to use the National Labor Relations Board.

• **Change in Plan**—Inland Steel established its pension plan in January, 1936—before C.I.O. moved into its plants. In 1945, the company broadened the retirement plan by requiring that employees be pensioned off at 65.

The company announced that it was going to retire 256 65-year-olds early in 1946. The union objected; it said that forced retirement would violate the seniority and discharge provisions of the union contract. The company refused to negotiate, and the case went to NLRB. That was before Taft-Hartley. Since then, of course, president Philip Murray and other officers of the steel union have refused—as a matter of principle—to sign non-Communist affidavits.

• **T-H Oath**—In April, 1948, NLRB ordered Inland Steel to discuss its pension plan—if and when union officers sign T-H affidavits. Both company and union appealed the decision—the union challenging the legality of the non-Communist oath requirement. The Supreme Court acted only on the company appeal; the union argument will be taken up by the court next fall.

SCALE REDUCED FROM

2.79% to .79%

Timken Bit—
heated by
TOCCO
Induction Heating

Bit—
heated by
conventional
methods

with TOCCO* Induction Heating

The very important savings obtained by TOCCO Induction Heating of rock drill bits for forging is typical of over a thousand cases involving metal parts of all shapes and sizes. If you manufacture parts which require hardening, annealing, brazing, soldering or forging, TOCCO can probably save you money, too.

1. Lack of Scale. Engineers at The Timken Roller Bearing Company report a reduction of scale—from 2.79% to .79% by the application of TOCCO to heating barstock for forging their rock drill bits.

2. Longer Die Life. An equally important savings results from greatly increased die life made possible by lack of scale and complete uniformity of heating obtained by TOCCO.

3. Production Up. Automatic TOCCO heats barstock at a rate which produces 1500 pieces per hour.

4. Other Advantages. TOCCO is compact, saves floor space; is free from radiant heat and gases usually present with conventional type furnaces. TOCCO engineers are glad to study your operations, without obligation, of course, for similar cost-cutting possibilities.

THE OHIO CRANKSHAFT COMPANY



TOCCO

NEW **FREE**
BULLETIN

Mail Coupon Today

THE OHIO CRANKSHAFT CO.
Dept W-3, Cleveland 1, Ohio

Please send copy of "Typical Results of TOCCO Induction Heating for Forming and Forging."

Name

Position

Company

Address

City Zone State



Bituminous is basic—the main-spring of America's might. Far-thinking executives—those who study existing facts, consider long-term possibilities, and prepare for emergencies—know this. So the vital decision so often made is, "build for bituminous."

Amid the uncertainties of the future is this fact: In the area served by the Baltimore & Ohio, lie vast, untapped reserves of excellent bituminous coals. They're in wide variety, and highly mechanized mines can produce them properly prepared for every requirement of modern industry.

Year after year, tireless research has made bituminous increasingly dynamic. Its further possibilities are tremendous. B&O, too, is constantly seeking better ways of serving the bituminous industry and its customers. More than \$80,000,000 has been spent in the last three years to improve B&O facilities for bituminous distribution. Here's real help for bituminous in guaranteeing the greatness of American industry for years to come. *Ask our man!*

BITUMINOUS COALS FOR EVERY PURPOSE

—from modern
mines like
this—>



BALTIMORE & OHIO RAILROAD

Constantly doing things — better!

INTERNATIONAL OUTLOOK

BUSINESS WEEK

APRIL 30, 1949



The end of the Berlin blockade won't solve much.

The Western powers have no intention of:

- (1) Giving Russia a voice in the Ruhr.
- (2) Halting plans for a West German state.
- (3) Granting the Soviet's claim to \$10-billion in German reparations.
- (4) Withdrawing occupation troops in the near future.

Yet these are all major objectives of Russia's strategy in Germany.

Sweeping victories in China will save whatever political loss of face Stalin suffers in Germany. The Far East is rapidly becoming his backyard.

•
Economically, we may be doing Stalin a favor by lifting the blockade.

It will allow goods to flow into prostrate Eastern Germany.

And it will stir up German demands for unity just at the time the new West German constitution is to be submitted to referendum.

All this just about dooms a meeting of the Big Four foreign ministers before it starts—if it starts at all.

•
Western Europe is on the verge of crucial decisions about:

(1) Intra-European trade restrictions—especially monetary controls and import quotas.

(2) Intra-European exchange rates.

Both ECA and OEEC feel that European trade will be in a permanent strait jacket if something isn't done soon.

•
The fight for internal stability—you might call it the battle of production—is won in most Marshall Plan countries.

Now the quest is for protection against foreign competition. That's where import quotas, tight controls on foreign exchange, pegged currencies all come in. But like opium they are habit-forming.

The more Western Europe gets addicted to trade controls, the less are the chances of free trade and a growing market. The U. S. ideal of selling more for less goes out the window.

•
Two ways of cutting through the trade snarl are up for discussion in official circles. Each has its drawbacks.

One theory: Remove all import quotas within the next few months. Tariffs would stay as is.

This way trade would be allowed a better flow. A more normal export-import pattern would emerge. Then the problem of rejiggering exchange rates could be tackled on the basis of competitive costs, etc. Later each country could make its own adjustment with the U. S. dollar.

•
There are two headaches in this potential plan:

(1) Countries with big import surpluses, like Britain, would be taking a risk. Removal of the quotas might make them liable to shell out gold to cover their debts. And most countries' gold reserves couldn't stand that.

(2) Western Europe can't drop import quotas on U. S. goods—especially durable goods. But Washington might object to a drop in all trade barriers except those against us.

•
Idea No. 2 is to align Western European currencies with the pound.

Some currencies, like the French franc and the Dutch guilder, would

INTERNATIONAL OUTLOOK (Continued)

BUSINESS WEEK

APRIL 30, 1949

probably be devalued vis-a-vis the pound. Others, like the Italian lira and the Belgian franc, might stay at the same relative rate. Possibly the Swiss franc would be worth more in terms of the pound.

After this reshuffle, import curbs would be scrapped, trade allowed to expand normally for a while.

Finally, the pound would be devalued vis-a-vis the dollar, the other currencies adjusting with it. (The big hope here, of course, would be to stimulate exports to the dollar area.)

The hitch is getting the various countries to see eye to eye on new exchange rates.

Discussions, however secret, are bound to touch off rumors. The get-rich-quick boys could keep the international money market in a turmoil. Some countries would be sure to take a big loss.

U. S. economic policy will effect the solution of Western Europe's trade problems.

ECA and OEEC officials are thinking that perhaps the U. S. will join a post-Marshall Plan economic partnership in Europe—as member of an organization succeeding OEEC.

They argue that in the long run economic policies, like military strategy, must be planned at the Atlantic community level. Otherwise Europe and its dependencies would drift into economic isolation.

The National Planning Assn. has come out with a "New American Policy in China." Here are the big points:

- (1) Resume international communications and trade as quickly as possible.
- (2) Keep giving "reasonable civilian assistance" to a nationalist government in South China or Formosa.
- (3) Work out terms under which foreign businessmen can operate in China "when so requested by the new government."

Czechoslovakia is trying to drive a hard bargain with the U. S. State Dept.

State is trying to get the Czechs to pay off the former owners of nationalized U. S. property in Czechoslovakia. The Czechs' terms: credit of \$100-million to buy raw cotton and machinery in the U. S. That, of course, would mean easing export controls to boot.

Business with Yugoslavia is picking up.

Yugoslav ambassador Kosanovic asked Secretary of State Acheson for U. S. help for a 400,000 h.p. hydroelectric project on the Naretva and Rama Rivers. The project, three years underway now, is stalled for lack of materials and machinery. It's a big item in Tito's Five Year Plan. Blueprints are going the rounds of U. S. engineering firms.

The Continental Supply Co., subsidiary of Youngstown Sheet and Tube, is reported to have landed a contract to supply Tito with oil-drilling equipment. Foster Wheeler Corp., New York, may get the job of installing it.

Herman Brassert, president of H. A. Brassert Co., New York, is enroute to Belgrade to talk steel plans with the Yugoslavs.

BUSINESS ABROAD

Greek Magnate Bets on U.S. Aid

Legendary Bodossakis counts on Marshall Plan help to cement his fortune, plugs for U.S. controls on the Greek economy.

ATHENS—There's at least one optimist left in Greece—one man who thinks U. S. aid still can bring peace and opportunity to this dreary land.

Perhaps it's just because he has more to lose than anybody else. But perhaps it isn't. This is no ordinary man. The Greeks call him Bodossakis. He's a legend in these parts. One petty Greek bureaucrat summed up the feeling when he said: "Bodossakis knows everything. He never makes mistakes. That is why he owns most of this country."

• **In Every Pie**—The bureaucrat wasn't laying it on. Bodossakis is one of that fabulous clan of Levantine traders—like the late Sir Basil Zaharoff, the Greek arms merchant, and C. S. Gulbenkian, the Armenian oil dealer (BW—Dec. 4'48, p114)—whose international dealings have amassed them huge fortunes. If anything, Bodossakis has the rest beat. He dabbles in everything from brandy and governments to dynamite.

The list goes on—and, thanks to the Marshall Plan, chances are it will grow even longer. Right now Bodossakis has plans set to build an oil refinery in Greece with Marshall Plan help. Indeed, Bodossakis' fortunes today are tied to American aid.

• **Tighter U. S. Controls**—If the Greek economy collapses, his wealth will evaporate. If American injections revive it, Bodossakis stands to be far richer than he has ever been before. Not unnaturally, Bodossakis favors tighter U. S. controls over such items as Greek imports, less interference by the inept and often corrupt Greek government.

Though Bodossakis controls about a third of Greece's heavy industry, the things that ail the baker and the shoemaker ail him, too. In this season of speculative profits, the interest rates have shot up as high as 1% a week. Bodossakis is delighted when he can borrow at an annual rate of 18%. Often he has to pay more. Because of tight credit, he says, his total outstanding indebtedness today stands at only \$2.8-million. Before the war he thought nothing of carrying \$35-million.

• **Taxes**—Like the baker and the shoemaker, Bodossakis pays the countless local imposts which plague Greek trade and traffic. These petty taxes mount



BODOSSAKIS—real name, Prodrimos Athanasiadis—controls a third of Greek heavy industry

up so fast that they price the goods right out of the buyer's reach. The U. S. mission to Greece has cut back a lot of these nuisance taxes, but nowhere near enough. As much as anything, this is the great blight of the civil war. The market is glutted with goods which lack buyers.

The war has strangled business initiative in Greece; it has chased Greek capital abroad or underground in private hoards at home. Bodossakis estimates that 2.6-million tons of Greek shipping have fled to Panamanian registry to escape Greek taxes. He thinks at least \$250-million in gold is being hidden at home. Only a renewed confidence in the Greek government will bring this capital back.

• **Hope for Peace**—Despite all this, Bodossakis thinks peace will come to Greece. He believes that, though Greece never exported enough to pay for its imports, this can be done in the future—if there is (1) an intelligent exploitation of natural resources, such as lignite; (2) improved agricultural methods; and (3) a selected export industry.

He admits that the picture is gloomy now: "The internal consumption is low, because of the war. Credit is tight, and without it industry cannot expand. The government, instead of helping us, often interferes."

• **Optimism**—But the conclusion is optimistic: "If you Americans make this country safe, help people regain con-

fidence, and enable foreign investors to come in, Greece will be all right. There will be no further need for U. S. economic aid."

Many American experts here don't share Bodossakis' optimism. But who are they to argue? Buell Maben, former UNRRA chief for Greece and now Bodossakis' U. S. adviser, says: "He has lost more millions in the past quarter of a century than I have years. But he's got all of them back."

• **High Style**—At 56, Bodossakis is a quick, nervous, paunchy man with very red cheeks and hard, black hair that looks like a wig, but isn't. He wears a double-breasted suit, which he forgets to button; a pearl in his cravat; and socks to match the tie.

He works at an old mansion on the main Athens thoroughfare—often starting at 5:30 in the morning. His office is a large, bright room with old, comfortable furniture, and oil paintings of a landscape and a battle. He keeps his secretaries out of sight, and his huge desk is clear of papers. On the mantelpiece there is a hand grenade from Bodossakis' arsenal. On a shelf there is a selection of his wines. When he talks of his products, his eyes sparkle and he forces a bottle of choice VSO on the visitor.

• **Farmer's Son**—There is little in the man to suggest his beginnings. A farmer's son, he was born a few miles from Istanbul, on the Asia Minor side of the Straits. His real name, never used, is Prodrimos Athanasiadis. Bodossakis is the Turk diminutive for Prodrimos. It is just as though ex-President Hoover were known by no other name than "Herbie."

All the schooling Bodossakis got was nine months at the age of 9. Out of school he worked as a shepherd, did odd jobs, finally went into petty village trade.

Here he quickly found himself. By the time he was 30, Bodossakis estimated his fortune at \$42-million—in trade, industry, hotels, and weapons.

When the Greeks and Turks began to beat each other over the head in 1922-23, Bodossakis sold arms to both, impartially and at a pleasing profit. But Bodossakis was of Greek descent. When the Young Turks won out, Bodossakis was run out, along with a million-odd other Greeks. People say he saw what was coming, managed to get some of his funds out.

• **Munitions**—In 1933 he was in Greek textiles; in 1934 back in munitions. He became a multimillionaire, selling arms in succession to the Spanish Loyalists, the Greek army battling the Italians, and the British Middle East forces. On the eve of the German invasion of Greece in 1940, some 15,000 men worked in his munitions works.

When the Germans came, they

stripped his arsenal. Bodossakis says he lost 90% of his machinery (which he is now slowly replacing), and \$60-million worth of raw materials. The Germans also took a small fortune in wool and cotton from his mills.

• **Mr. Big**—Bodossakis is by far the biggest man in Greek industry today. His Lipasmata Co. has a near monopoly on chemical fertilizer made here. His glass factory turns out 90% of Greek glass. His pyrite and lignite mines employ 1,000 workers. His Vassiliades Co. is the only modern shipyard in Greece. His Greek Powder & Cartridge Co. has the biggest machine shop and powder plant in the Middle East. It turns out items ranging from knitting looms and window frames to .38 ammunition.

A textile king, Bodossakis owns the Greek Textile Co. and its three plants near Athens. His Ethel Rubber Co. turns out rubber shoes and clothing. His Greek Wine & Spirits Co., with its 33 wineries, is the country's biggest; it exports brandy even to liquor-wise France. He is a director of the country's biggest bank.

• **Detested—and Respected**—Fellow-industrialists, who to a man detest him, call Bodossakis a business buccaneer.

He will enter into no combinations which he cannot dominate. He will smash those who oppose him. He is up to his neck in politics—heavily financing all major parties, and it is freely suggested, exacting favors in return. One of his factory managers, a retired admiral, was actually a prime minister on one of Greece's postwar cabinets.

But even his rivals admit that Bodossakis is one of this country's very few modern businessmen. And in this land where federal-tax exemption for business firms is as common as olive oil, Bodossakis is known as a man who pays at least some taxes.

CANADA HOLDS TRADE FAIR

TORONTO—The Canadian International Trade Fair will stage its second performance here May 30 to June 10. Exhibitors from 32 countries will take part.

Surprise newcomer will be a delegation from Yugoslavia. It will show textiles, nonferrous metals, building materials, and chemicals. The only other Iron Curtain representative will be Czechoslovakia, with a display of Skoda and Tatra automobiles.

Biggest exhibits will be those of textile manufacturers, especially British (Britain is having a tough time selling its textiles in Canada).

The U.S. will be well represented with iron- and steel-product exhibits. General Motors Corp. will have a display of cars for export.

Canada will sponsor an exhibit of radioactive materials for industry.



CALLS FOR HELP, for more foreign capital, show how badly . . .

Indian Economy Is Stalled

Political pressures, inflation, lack of capital, low productivity are tough problems for young government. Only rigid repression staves off communism.

NEW DELHI—A U.S. businessman, looking for sales or investments in India has been faced in the last few weeks with this paradox: a country which (1) is in desperate need of foreign capital and, (2) appears to be pushing foreign investors away with both hands.

• **Closed Door**—Prime Minister Pandit Nehru told the Indian parliament that there is no "open door" to foreign capital in India—nor is there likely to be one. Only in exceptional cases, he said, may majority control of finances or management rest with non-Indian interests.

At the same time the Indian parliament passed a bill giving the government controls just short of nationalization over nearly all India's industries. Only one thing keeps the bill from being put into effect: It will take years for India to build up a big enough bureaucracy to enforce it.

Finally, this week in London an Indian delegation is cloistered with leaders of the British Commonwealth of Nations to decide if a republic can be ruled by a king.

• **Realities**—These events bear no relation to the economic realities of India today. Anybody can see that the job of feeding and clothing one-tenth of the world's population isn't getting any easier for India's fledgling government.

This year's bill for food imports will be about \$60-million more than last year's whopping \$390-million. And last

year's dollar trade deficit was \$160-million.

New industrial investment is at a standstill; the country's capital market has dried up. The government's grandiose industrialization plans look more and more like pipe dreams.

• **Politics vs. Economics**—If the statistics and the legislation don't jibe, it's just because the politics and the economics don't fit together. Prime Minister Nehru walks a precarious path: On one side is the shadow of starvation for his people; on the other, is an almost hysterical bitterness against foreign "exploitation."

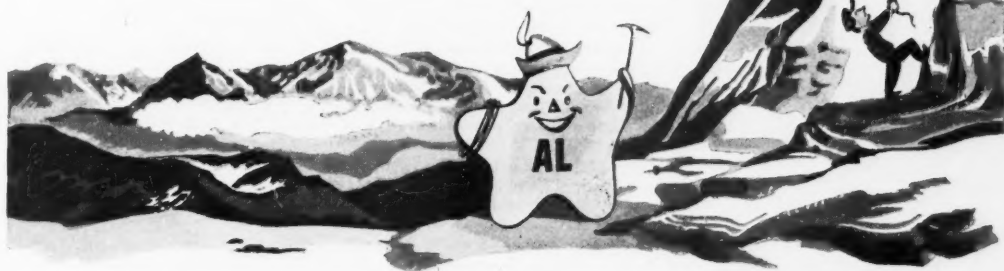
Economics will probably prove the stronger of the two. The end of the London conference of Commonwealth ministers is sure to find India huddled with the rest against common economic dangers. The bill to give the government sweeping controls over India's industries may be largely forgotten before anything can be done to implement it. Nationalization plans have already been shelved.

• **Door Ajar**—Most important of all, foreign capital, despite the belligerent talk, actually will be welcomed warmly—if it will come.

Nehru can't say it publicly, but these are the rules he has laid down for foreign investors:

Government approval will be needed for any investment. It will be granted

We can show you
the way UP
in Special Steel Values



The only real value in a material lies in what it will *do* for you. Will it improve the quality of your products—let you give more to the user at the price? Or, on the other hand, will it improve your cost position—help to keep open your vital area of profit?

When you begin to think about better materials, you're automatically in the field of special high-alloy steels—and *Allegheny Ludlum*. From the various AL families of

stainless and heat-resisting steels, tool steels and sintered carbides, special high-temperature alloys and electrical materials, let us help you to select the metals that will yield the benefits you're looking for.

Just remember that the first cost of a special steel may be only a little, if any, more than the material it replaces—and it's usually many times cheaper in the long run.
● Our Technical Staff is fully at your disposal.

Complete technical and fabricating data—engineering help, too—yours for the asking.

ALLEGHENY LUDLUM STEEL CORPORATION

The Nation's Leading Producer of Stainless Steel in All Forms



Pittsburgh, Pa. . . . Offices in Principal Cities

Allegheny Metal is stocked by all Jos. T. Ryerson & Son, Inc., Warehouses

W&O 2333

**AVAILABLE FOR LEASE
SHIPBUILDING AND SHIP REPAIR
FACILITIES AT GOVERNMENT OWNED
NAVAL INDUSTRIAL SHIPYARD,
PHILADELPHIA, PENNSYLVANIA**

The Commandant, Fourth Naval District, acting for the Chief of the Bureau of Yards and Docks, Department of the Navy, invites proposals for the leasing of shipbuilding and repair facilities at the Naval Industrial Reserve Shipyards (formerly Cramp Shipyards), Philadelphia, Pennsylvania, which yard was operated during World War II by Cramp Shipbuilding Corporation for construction and repair of naval vessels.

This facility consists of land, improvements, buildings and structures, piers and quays, graving dock, utility services, weight handling equip., and machine tools and equip. for the const. and repair of vessels but can be used for other industrial purposes.

LOCATION: This plant is located on the west bank of the Delaware River, fronting on Richmond Street between Dvott Street and North Delaware Avenue to Cumberland Street in the City of Philadelphia.

ACCESS: The plant is served by the Reading and Pennsylvania Railroads, with ample trackage reaching to all points within the plant. Public transportation is available in the immediate vicinity. Vehicular access is provided by the City of Phila. highway system. The deep channel of the Delaware River provides water access to the facilities.

LAND: There are approx. 50 acres consisting of 33 acres of upland and 17 acres of water area within the pier-head line.

BUILDINGS AND STRUCTURES: Available facilities consist of 12 piers of varying size from 60' in length to 350' in length and having an approximate total area of 127,000 square feet; 2500 linear feet of quays; four shipbuilding ways, 720' long — 2 at 95' wide and 2 at 30' wide with bearers, served by 30 ton overhead traveling cranes; a graving dock 643' in length, coping width 88', depth over sill at M.H.W. of 30' and depth over blocks at M.H.W. of 26'; machine shop 120' by 320'; fabricating shop 210' by 540', having a second floor area of 85,000 square feet of which 40,000 square feet is a mold loft floor. There are also numerous service buildings including carpenter shop, tool rooms, offices, toilet and locker rooms, and minor storage structures totaling approximately 30,000 square feet. The fabricating shop is served on the south end by a steel storage yard of approximately 30,000 square feet with three 10 ton and one 5 ton overhead traveling cranes, and on the north end by a preassembly platen having approximately 60,000 square feet and equipped with four 15 ton and one 10 ton overhead traveling cranes.

SERVICES AND UTILITIES: Complete utility services are available including heating and process steam, compressed air, water, electricity, telephone, acetylene, oxygen, etc., through facilities on premises. Cost of such services is in addition to rental.

MACHINERY AND EQUIPMENT: The structures and buildings are equipped with cranes and other weight handling equipment usually provided for shipbuilding and ship repair work. There is also available auxiliary mobile weight handling equipment. Machine tools and appurtenances sufficient to operate the plant for ship repair and shipbuilding are available within the yard.

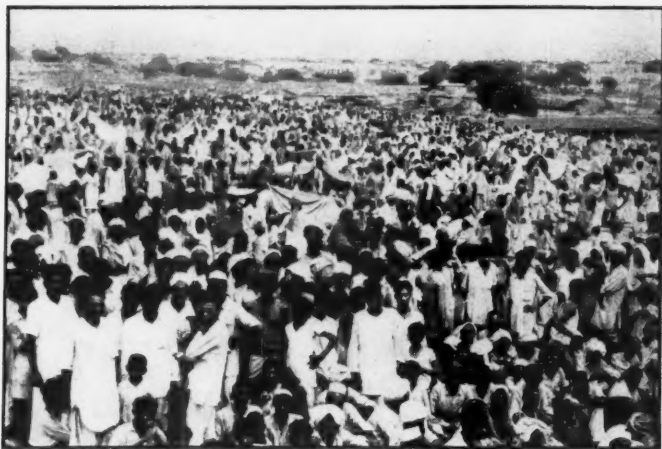
GENERAL INFORMATION: The property will be leased pursuant to the Act of 5 August 1947 (Public Law 364—80th Congress—First Session) and subject to such restrictions as the Navy shall deem necessary or advisable to retain the shipbuilding and ship repair capacity of the plant.

Written proposals in duplicate for the leasing of these facilities, in whole or in part, will be received by the Commandant, Fourth Naval District, United States Naval Base, Philadelphia 12, Pennsylvania until 16 May 1949. The Navy reserves the right to reject any or all proposals.

Proposals for the leasing of facilities for ship construction and repair are especially solicited and will be given preference above other uses in selecting lessee. The Navy Department cannot guarantee occupancy of the facilities presently leased under NOY(R)-60050 prior to 24 May 1949 but will interpose no objection to arrangements being made with the present lessee, Delaware River Shipbuilding Corporation, Richmond St. and Delaware Ave., Philadelphia, if use and occupancy is desired prior to such date and provided the lease is consummated prior to such date.

Prospective lessees may inspect the facilities and obtain detailed information thereof by application to the Commandant, Fourth Naval District, attention District Public Works Officer.

(100)



DISILLUSIONED millions of Indians are fertile ground for communism

only if the new industry is one India really needs. Chances are the government itself will be either a major or a minor partner with the foreign investor.

The industries that the Indian government feels it really needs include steel, machine tools, heavy chemicals, generating equipment, mining, communications equipment, and synthetic fuels. These are more than just examples. Foreign firms have been engaged to prepare project surveys on most of them already.

• **Management Contracts**—Outright foreign ownership will be extremely unlikely. Most probable arrangement will be the use of management contracts which will:

(1) Guarantee fixed costs and a certain percentage of profits when production starts. Repatriation of those profits will also be guaranteed.

(2) Call for compulsory training of Indian personnel to take over production and management.

(3) Require Indian control of distribution and sales.

(4) Allow for possible selling out of the investment by the foreign investor in the future and repatriation of the payment. (Nehru has publicly guaranteed compensation in the case of future nationalization.)

Little Chance—Considering the sorry state of India's domestic economy, it's hard to see how this formula will attract enough foreign capital to do the country much good.

India today has little or no private resources for large-scale industrial development. There is no "strike of capital"—just an absence of it. Informed economists think no more than 2% of India's national income goes into savings.

Many grandiose private industrial schemes, announced within the last two years, have been shelved for lack of

capital. And the government itself is having a rough time with its borrowing. It first aimed at raising \$450-million in loans during fiscal 1948-49; then it cut the target to \$250-million; it has actually raised only \$160-million.

• **Production Down**—While the capital market has been drying up, production from India's functioning industrial plant has been falling off. Although 15% of India's imports last year were capital goods, industrial activity today is only 5% above prewar.

No major Indian manufacturing industry meets domestic requirements. And last year only one—cotton textiles—made any significant production gain. (Thanks to a temporary decontrol of clothing, the industry turned out 4.5-billion yards of cloth, 700-million more than in 1947.)

But India's coal output last year was down a quarter of a million metric tons to 29.7-million—far short of domestic needs. Steel output—854,000 metric tons—was only two-thirds of rated capacity, one-third of basic needs. Cement gained a bit last year, but is still running at not much more than half the country's installed capacity of 2.4-million metric tons.

To round out the dreary picture, India's big foreign trade items—jute, tea, and raw cotton—are all in a bad way. Pakistan got 75% of prewar India's jute acreage, all of the raw cotton. Problems involved in paying Pakistan for these items has upped the price of India's jute and cotton manufactures. Indian tea is meeting resistance on both quality and price grounds, especially in the dollar market.

• **Inflation**—At the root of all this trouble is inflation; a legacy left the new Indian government by the British. Britain financed its war costs and purchases in India by inflation. Indian presses

turned out rupees galore; the note circulation jumped from \$510-million before the war to \$3.5-billion now. These rupees were secured by an equivalent amount of sterling credited to India's account. Later the sterling was blocked, and today the blocked sterling is the backing for India's currency.

At the end of the war, India's sterling balance amounted to \$6-billion. Today it is little more than half that figure.

This inflation played havoc with prices in India—especially after controls were taken off food and clothing in 1947. (They were put back on at the turn of the year.) The cost of living ranges from 300% to 550% of prewar in different parts of the country. Industrial raw materials top +55%; manufactures, 320%.

• **Other Troubles**—Inflation got a lot of helping hands in stifling India's industries. Taxes run as high as 98% in top brackets; hundreds of thousands of refugees are stuffing the country's big cities; the population grows phenomenally, perhaps by as much as 4-million a year.

Production has also been kept down by an antiquated transportation system (India has nearly 900 foreign locomotives on order now) and falling labor productivity.

In the coal mines output per man has slumped from 2.5 metric tons a day in 1935 to about 1 metric ton today. And the coal mines are not exceptional. It is a truism in India that it takes more workers than ever to turn out the same or less goods. Industrial labor, embittered at the failure of Utopia to come with independence and squeezed to the wall by inflation, is staging a national slowdown.

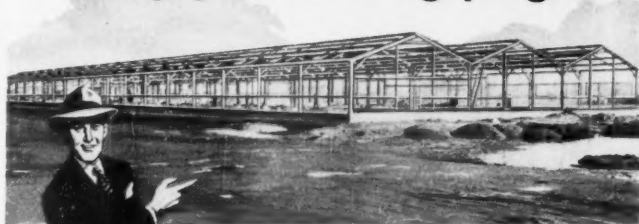
• **Unrest**—Factory workers aren't the only ones in India who have been disillusioned. The whole country is restless. The peasants have rioted against grain collectors. City policemen have been stoned; factory property has been torn up by strikers. Communists, as is their custom, are reaping a harvest from the discontent.

In keeping order the Indian government has resorted to far harsher measures than the British ever sustained for long during their century of rule. In many parts of India police may make arrests without a formal charge, jail the victim without a trial, and deny him the right of habeas corpus—all on the grounds that "public security" makes it advisable.

These powers are a desperate attempt to stave off disaster. Without such repression there seems little doubt but that India would be a pushover for Communism.

• **Red Lever**—More and more India's leaders may have to use their country's vulnerability to pry help out of the west. There is no doubt that there is a growing feeling in India that anti-Communist

Don't let high costs hold up your building program



You can build now, for less than you think, by planning your expansion around Standard Buildings by LURIA

Whether you need a small warehouse or a large industrial plant, Luria can help you cut your building costs—without "cutting corners." Savings of 20%, 30%, and in some cases as much as 50% have been made possible because Luria buildings offer you these four important advantages:

1. **No Engineering Expense.** Luria buildings are pre-engineered to meet the most exacting codes. Yet they provide the widest possible range of adaptability and architectural freedom.

2. **Lower Cost of Materials.** Luria buildings are designed with fewer and heavier structural members which are produced in quantity, with less fabrication and handling expense.

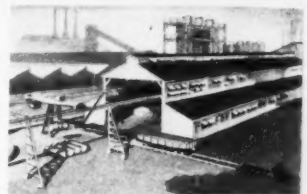
3. **Lower Erection Cost.** All field connections are designed for bolting. No welding or riveting is required.

4. **Reduced Maintenance Expense.** Luria's truss-free, rigid-frame design, with all members of heavy, rolled-steel sections, reduces maintenance costs to the minimum.

Before you ask for bids on any new building, be sure to get the complete facts on Luria's standard line. The coupon below will bring you a copy of our new 20-page catalog, together with the name of your nearest Luria distributor.



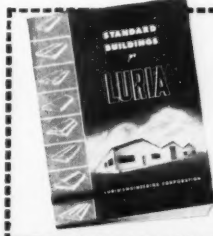
Luria Standard Buildings can, in effect, be "custom tailored" to your exact requirements—for anything from a warehouse...



to the heaviest type of industrial building. Whatever you're planning to build, chances are it's standard with Luria.

Standard Buildings by LURIA

"All the advantages of standardization, without the usual limitations"



LURIA ENGINEERING CORPORATION
500 Fifth Avenue, New York 18, N. Y., Dept. B21

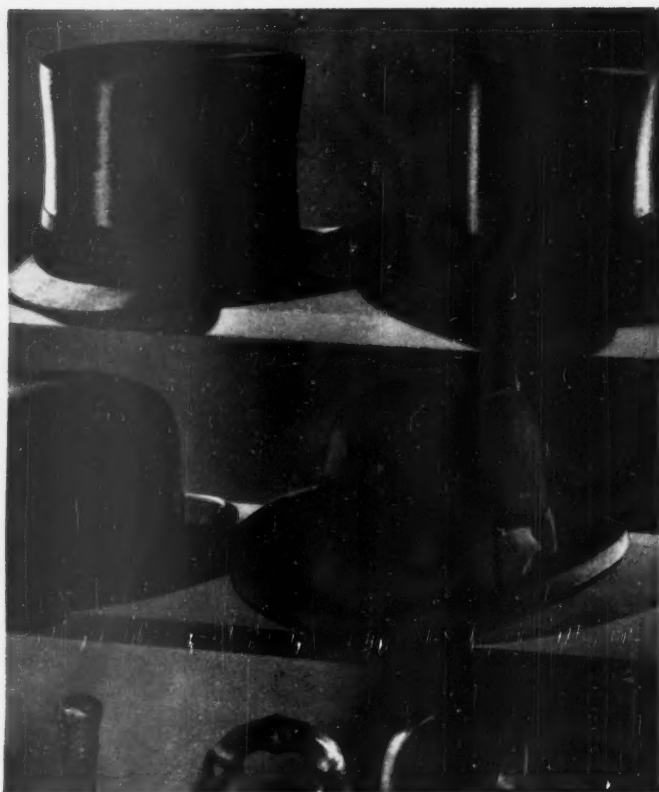
Gentlemen: Please send me your new 20-page catalog.

NAME.....

COMPANY.....

ADDRESS.....

CITY..... STATE.....



Putting heat on diplomats

Through the corridors of an internationally-known hotel in Mexico City, walk feet that are equally at home in Europe's palaces and Council Halls. Diplomats. Ex-kings. The great and the near-great. And comfort-fussy American tourists.

This glamorous inn had a heating problem. Night air in mountainous Mexico City has more than a touch of chill, even though days are warm and sunny.

The solution? Sleek, slim Trane Convectors were recessed into room walls to provide healthful night warmth for diplomat, exile, and tourist alike. Score another first for the same Trane Convectors that provide welcome "Active Air" warmth in thousands of homes, stores, offices, plants.

Do you, too, have an air problem? If so, remember that Trane engineers know air. How to warm it, cool it, dry it, humidify it, clean it or move it. Your local Trane office will be glad to work with your own architect, engineer or contractor.

THE TRANE COMPANY • LA CROSSE, WISCONSIN
TRANE COMPANY OF CANADA, LTD., TORONTO

TRANE
THE HOUSE OF WEATHER MAGIC

MANUFACTURING ENGINEERS OF HEATING AND AIR CONDITIONING EQUIPMENT • OFFICES IN 75 CITIES

nist interests will find it wise to shell out plenty to keep India strong and free—that questions of interest rates and control over industries will not be very important.

BUSINESS ABROAD BRIEFS

Ford's Mexican subsidiary is slated for a \$2-million expansion. Output of cars and trucks is to go up 50%; the 18-yr.-old plant is to be modernized.

Dewey & Almy Chemical Co., Cambridge, Mass., is rebuilding its war-damaged plant in Naples, Italy. The plant will turn out container-sealing compounds for the Italian food industry. Plans are set for a new plant to produce the same thing in France.

Britain's coal mines can look for more equipment soon. Joy-Sullivan, Ltd., British subsidiary of Joy Mfg. Co., Pittsburgh, will build a new manufacturing plant at Greenock, near Glasgow, Scotland. It will turn out coal-cutting, loading, and handling machinery.

Six new plants, to make Canada Dry's complete beverage line, will be opened by mid-summer. Plants are in Nassau, B. W. I.; Guatemala City, Chihuahua, Mexico; Barcelona, Venezuela; Portuguese East Africa; El Salvador, Kuming.

A Brooklyn brewery, Old Dutch Brewers, Inc., is moving lock, stock, and barrel to South Africa. General Industries, Ltd., is helping finance the shift. Production is slated to begin by end of the year.

Officine Galileo Corp., New York representative of an Italian firm, is considering going into textile-machinery manufacturing in the U.S.

Lower U.S. sugar-tariff rate has been offered Peru and the Dominican Republic at talks going on at Annecy, France. Proposed cut: 84%. U. S. is still giving Cuba preferred treatment; it gets an 18 1/2% cut in the tariff.

Brazil has official U.S. permission to negotiate with G.E. and Westinghouse for the purchase of a cyclotron. It is to be set up at the Brazilian Army's technical school near Rio.

A \$15-million oil refinery will be built in the Dominican Republic. International Industrial Consultants S. A., the republic, and "foreign investors who are residents of the country" will put up the money. Planned capacity: 25,000 bbl. a day.

ECA'S LEDGER

ECA almost ran out of money before Congress passed the second-year authorization bill. During the first few days of April, the recovery kitty got as low as \$57-million.

The new bill gives ECA a \$1-billion loan from the Reconstruction Finance Corp. to tide it over until Congress votes next year's money. So procurement authorizations will start rolling again soon.

Actually ECA grants haven't slowed down. "Token" authorizations have been made for about a month now—small grants of a few thousand dollars, with a proviso that when the bill was replenished the authorization would be built up. Thus a \$50,000 machine-tool order may have been advance notice for a much bigger one to come.

Other Developments:

China. ECA will continue aid to China on a limited scale. According to present plans, a few ECA officials will stay put in Shanghai even after the Communists take over. They will dole out the \$12.7-million worth of raw cotton, rice, and wheat stockpiled there.

Ships enroute to Shanghai with ECA goods haven't been diverted yet. Most recovery shipments have been headed for Canton for some time now, anyway.

Austria. ECA has been a real boon to Austrian heavy industries. Production in several key lines is up anywhere from 6% to 700% over prewar.

Some examples: Pig-iron output is now averaging 60,200 tons a month, 86% more than in 1937; rolled steel products average 38,000 tons a month, 6% ahead; ball bearings are up to 320,000 sets a month, 296% ahead; monthly spun-rayon output is 1,240 tons, 740% ahead of 1937.

Most consumer goods industries still lag far below prewar levels. Emphasis so far has been on heavy industries that contribute to the country's export trade. But before this year is out, ECA shipments are expected to bring the consumer-goods industries up, too.

Productivity. A 16-man team from Britain's textile industries is due here late next month to study U.S. textile operations. The team will be made up of five workers, five supervisors, five technicians, and G. J. G. Fisher, assistant director, British Rayon Federation.

Reverse plans are also under way—to send a U.S. team to study production methods in the British textile industry.

New Faces. Barry Bingham, Louisville newspaper publisher, has replaced David K. E. Bruce as chief of ECA's mission to France. Last week Bruce was named ambassador to France.

ADVERTISERS IN THIS ISSUE

Business Week—April 30, 1949

ALLEGHENY LUDLUM STEEL CORP. 115	THE INTERNATIONAL NICKEL CO., INC. 17
Agency: Walter & Downing	Agency: Marschall & Pratt Co.
ALLIED STRUCTURAL STEEL COMPANIES 101	JOHNS MANVILLE CORP. 32
Agency: The Fensholt Co.	Agency: J. Walter Thompson Co.
ALLIS-CHALMERS MANUFACTURING CO. 76	KELLER TOOL COMPANY 94
Agency: Coughlin Advertising, Inc.	Agency: The Fensholt Co.
THE ALLISON CO. 100	KELLOGG SWITCHBOARD & SUPPLY CO. 46
Agency: Edward W. Robotham & Co.	Agency: Evans Associates Co.
AMERICAN LAVA CORP. 55	LURIA ENGINEERING CORP. 121
Agency: Power and Condon	Agency: Richard & Co., Inc.
A. M. A. NAT'L PACKAGING EXPOSITION 82	P. R. MALLORY & CO., INC. 95
Agency: James R. Flanagan Adv. Agency	Agency: The Atkin-Kinnett Co.
AMERICAN NICKELDOL CO. 96	THE MARINE MIDLAND TRUST CO. OF
Agency: Kenneth B. Butler & Associates	N. Y. 26
AMPRO CORP. 44	Agency: Barton, Barton, Durstine & Osborn, Inc.
Agency: Irving J. Rosenblum Adv. Agency	Agency: Briggs & Varley, Inc.
ANGIER CORP. 106	MANNING, MAXWELL & MOORE, INC. 99
Agency: Cutler and Quinn Adv.	Agency: Briggs & Varley, Inc.
"AUTOMATIC" SPRINKLER CORP. OF	McGraw-Hill Publishing Co., Inc. 78-79
AMERICA 36	THE MEAD CORP. 7
Agency: Meek & Thomas, Inc.	Agency: Gray & Rogers
THE BAKER RAILROAD CO. 112	MERCURY MANUFACTURING CO. 100
Agency: G. M. Bradford Co.	Agency: O'Grady Anderson
BALTIMORE & OHIO RAILROAD 114	MICRO SWITCH DIV. OF
Agency: The Richard J. Foley Adv. Agency, Inc.	FIRST IND'L CORP. 64
BANK OF THE MANHATTAN CO. 36	Agency: Hamilton Adv. Agency, Inc.
Agency: Kenyon & Eckhardt, Inc.	MIDWEST FARM PAPER UNIT 77
BANKERS TRUST CO. 1	Agency: Olmsted & Foley
Agency: Cowan & Bengler, Inc.	MITCHELL RAND INSULATION CO. 92
BELL & HOWELL CO. 83	Agency: Saul J. Gallag. Adv.
Agency: Henri, Hurst & McDonald, Inc.	MOBILIFT CORP. 4
BLAW-KNOX CO. 52	Agency: House & Leland, Adv.
Agency: Al Paul Letton Co., Inc.	THE MOTO-MOWER CO. 102
BOWER ROLLER BEARING CO. 2nd Cover	Agency: Hyatt Ebb
Agency: MacManus, John & Adams, Inc.	NAVY DEPT. 120
BUNDT TUBING CO. 30	NEKOOSA-EDWARDS PAPER CO. 86
Agency: Broskie, Smith, French & Dorsanice, Inc.	Agency: The Cramer-Krasselt Co.
BURROUGHS ADDING MACHINE CO.	NORFOLK & WESTERN RAILWAY CO. 11
INC. 62-63	Agency: Houck & Co. Adv.
Agency: Campbell-Erskine Co.	THE OHIO CRANKSHAFT CO. 113
BUSINESS WEEK 34-35	Agency: Carr Liggett Adv., Inc.
Agency: Ellington & Co., Inc.	OZALID, DIVISION OF
BYRON JACKSON CO. (PUMP DIVISION) 104	GENERAL ANILINE & FILM 91
Agency: Dana Jones Co.	Agency: Young & Rubicam, Inc.
CANTON STOKER CORP. 97	THE PENNSYLVANIA CO. 14
Agency: H. M. Kilgus-Smith Co.	Agency: N. W. Ayer & Son, Inc.
CELANESE CORPORATION OF AMERICA 61	PENNSYLVANIA SALT MFG. CO. 107
Agency: Ellington & Co., Inc.	Agency: Geare-Marston, Inc.
THE CELOTEX CORP. 87	PEOPLES FIRST NATIONAL BANK &
Agency: MacFarland, Aysard & Co.	TRUST CO. 88
CENTURY ELECTRIC CO. 95	Agency: Kottlum, MacLeod & Grove, Inc.
Agency: Oaklich R. French & Assoc.	PITNEY-BOWES, INC. 106
CESSNA AIRCRAFT CO. 47	Agency: L. E. McGivern & Co., Inc.
Agency: Gardner Adv. Co.	PITTSBURGH CORNING CORP. 111
CLUES 92-99	Agency: Barton, Barton, Durstine & Osborn, Inc.
CONNECTICUT GEN'L LIVING INS. CO. 8	PULVERIZING MACHINERY CO. 82
Agency: Edward W. Robotham Co.	Agency: Moravsky, Handy & Van Denburgh
CONTINENTAL SCREW CO. 89	RAPIDS-STANDARD CO., INC. 60
Agency: Henry A. Louden, Adv. Inc.	Agency: Wesley Aves & Assoc.
COUNTRY GENTLEMAN 48-49	RAYONIER, INC. 108
Agency: Lamb & Kern, Inc.	Agency: Gert, Jullian & Co., Inc.
CUMMINS ENGINE CO., INC. 50	REMINGTON RAND, INC. 81
Agency: Spencer W. Curtis, Inc.	Agency: Lefford Adv. Agency, Inc.
C. A. DUNHAM CO. 110	REVERE COPPER & BRASS, INC. 56
Agency: The Buchen Co.	Agency: St. Georges & Kenes, Inc.
E. I. du PONT de NEMOURS & CO., INC. 2-3	ROYAL TYPEWRITER CO., INC. 102
Agency: Barton, Barton, Durstine & Osborn, Inc.	Agency: Young & Rubicam, Inc.
DUREZ PLASTICS & CHEMICALS, INC. 38	JOS. T. RYERSON & SON, INC. 27
Agency: Constock, Duffes & Co.	Agency: Atchey, Moore & Wallaer, Inc.
ELECTRIC INDUSTRIAL TRUCK ASS'N 18	SIMONDS SAW & STEEL CO. 33
Agency: Korchum, MacLeod & Grove, Inc.	Agency: Sutherland-Albert
ELLIOTT ADDRESSING MACHINE CO. 97	SOCO-VACUUM OIL CO., INC. 3rd Cover
Agency: Alley & Richards Co.	Agency: Coughlin Adv., Inc.
A. B. FARQUHAR CO. 90	STANDARD OIL CO. (NEW JERSEY) 41
Agency: Van Sant, Dugdale & Co., Inc.	Agency: McCann-Erickson, Inc.
FORD MOTOR CO. 12	STATE OF NORTH CAROLINA 105
Agency: J. Walter Thompson Co.	Agency: Ayer & Gillott, Inc.
FRIGIDAIRE DIV., GEN'L MOTORS CORP. 4	STOLPER STEEL PRODUCTS CORP. 84
Agency: Foote, Cone & Belding	Agency: Klutt-Van Pietersen-Dunlap Assoc.
GAYARD CONTAINER CORP. 50	TIMKEN ROLLER BEARING CO. 4th Cover
Agency: Oaklich R. French & Assoc.	Agency: Barton, Barton, Durstine & Osborn, Inc.
GENERAL BOX CO. 59	TOLEDO, PEORIA & WESTERN RAILROAD 94
Agency: The Buchen Co.	Agency: Hodler, Arlingst, Thomson & Becht
GENERAL ELECTRIC CO. 5	TOWMOTOR CORP. 53
AIR CONDITIONING DEPT. 85	Agency: Howard Swink Adv. Agency
Agency: Kenyon & Eckhardt, Inc.	THE TRANE CO. 122
GENERAL ELECTRIC CO. 5	Agency: Tatham-Laird Inc.
CONSTRUCTION MATERIALS DIV. 93	UARC, INC. 109
Agency: G. M. Bradford Co.	Agency: The Buchen Co.
GENERAL FIREPROOFING CO. 57	UNITED AIR LINES 81
Agency: The Grisold-Eshleman Co.	Agency: N. W. Ayer & Son, Inc.
GENERAL MILLS, INC. 6	U. S. GUTTA PERCHA PAINT CO. 37
Agency: Barton, Barton, Durstine & Osborn, Inc.	Agency: Sutherland-Albert
THE GIRDLER CORP. 43	WAGNER ELECTRIC CORP. 48
Agency: Beebe, Williams & Cleary, Inc.	Agency: Arthur R. Moege, Inc.
GLOBE AUTOMATIC SPRINKLER CO., INC. 92	WEBSTER ELECTRIC CO. 103
Agency: Marschall & Pratt Co.	Agency: Hamilton Adv. Agency, Inc.
HANMERHILL PAPER CO. 66	WESTINGHOUSE ELECT. CORP. 28
Agency: Barton, Barton, Durstine & Osborn, Inc.	Agency: Fuller and Smith and Hoss, Inc.
HILTON HOTELS CORP. 75	THE YODER CO. 42
Agency: Neulman & Goshmann Inc.	Agency: G. M. Bradford Co.
INDUSTRIAL TAPE CORP. 45	YOUNGSTOWN SHEET & TUBE CO. 5
Agency: Kenyon & Eckhardt, Inc.	Agency: The Grisold-Eshleman Co.

Ready to Retire?

You often heard a comment like this about a retired man past 65: "He certainly was a success in business." Or: "He had a wonderful career in his lifetime." Even though the man still may have years to live, the comments about him sound as though he is through, done for.

All too often, that is the bitter truth. The man past 65 who has given up his main life's work is commonly a person who has gone into heavy eclipse. The rarity is a man who has planned hard and prepared fully for old age and retirement in his earlier years. By planning and preparing we don't mean financial arrangements alone; we also mean what is done beforehand to get ready in other ways—mentally, physically, psychologically, spiritually.

Those problems are every man's problems. No one, whether he be doctor, lawyer, merchant, chief, can escape them if he lives to retirement age and then retires. According to Social Security records, there are 10-million in the U.S. now who have reached the age of 65. More than half of them are unable to support themselves. Very, very few are happy, according to sample surveys made.

If there are so many people of retirement age and so few are equipped for retirement, it sounds as if there is a large potential clientele for retirement counselors. But, to our knowledge, there ain't no such animal.

What there is, however, is a brand-new book to help you counsel yourself. It is well-named: "How to Retire—And Enjoy It" (Whittlesey House, New York; \$5). The book was written by Ray Giles, an authority on the subject of insurance and annuities. He is a retired businessman himself.

The author's experience qualifies him to write about the financial angles of retirement. He devotes one whole section of the book to the money question. Giles lists three "musts" for establishing satisfactory retirement income. He says: (1) You must save money systematically; (2) you must put that money in safekeeping; and (3) your assets must be intact at retirement. Unless you are one of the few who has tackled this problem thoroughly, you will be surprised to find how many details are involved.

Much more space is devoted in the book to the non-financial aspects of retirement. Giles points out that physicians, psychologists, and social workers agree on this: Most men and women, even at an advanced age, have unused assets that could make their lives brighter than they usually are. He advocates all sorts of devices to provide some feeling in the retired person that he is not "on the shelf." Some of the most interesting possibilities he develops are the ways in which a retired businessman may go into business all over again—at a slower tempo, of course.

The book is filled with "do's" for enjoying retirement. It wisely contains some "don'ts," also. He warns,

for example, against haunting your home all the time—or your former place of business.

Giles sums up his own book by saying: "Success or failure in retirement depends on how well you plan ahead, and on how well you go to work to make the most of your plan once you quit your job. The well-filled retirement is the good retirement; the hit-or-miss retirement may only lead to your physical, mental, and spiritual disintegration."

Unemployment Or Not?

The country is feeling the effects of a little unemployment. To a union leader, the situation is apt to look worse than it is—just as a manufacturer with sales down 10% might feel as if the roof had fallen in (even though he very likely is doing two or three times the dollar volume he averaged in 1935-39).

So it is perhaps not illogical that the United Electrical Workers (C.I.O.) should come forward with a study—a study designed to prove that the unemployment estimates of the Census Bureau are too low. U.E.'s views on unemployment are that a man who isn't getting 40 hours of work each week is not fully employed. Maybe he should be counted as half a man employed and half unemployed, if he works only 20 hours.

Actually, the Census Bureau follows a formula that is at least consistent. If a man has a job but isn't working, he is counted as employed. The reason he isn't working, more often than not, isn't what the U.E. implies: It isn't that he has been laid off; it is that he either is sick, has a hangover, or just plain wants to go fishing.

If, however, he has been laid off indefinitely, U.E.'s argument gains weight. He may, in all truth, not have a job. But if he himself is not seriously looking for work—presuming that he will be called back to the old job—how can the Census Bureau, in good conscience, mark him down as unemployed?

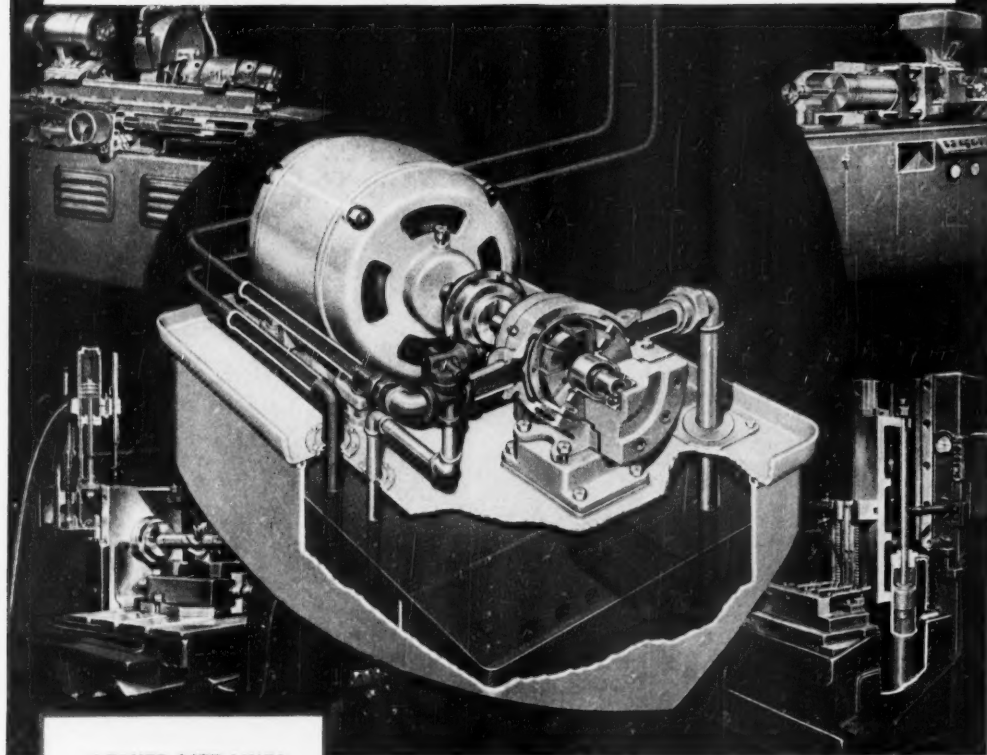
What if a woman worked at the peak of the Christmas season, then went home without looking for another job? The Bureau considers that she has dropped out of the labor force. U.E. thinks she probably went home not because she wanted to, but because she knew there wasn't any other job opening for her; thus she is unemployed even though she isn't looking for work. The same thing, the union argues, also applies to many youngsters and oldsters.

It may be that the Census figures on unemployment are on the low side. Any sampling is liable to a certain margin of error. The Bureau, in fact, assumes that it might be something like a quarter of a million out in estimating unemployment of the present magnitude.

Yet its methods are basically the same as those by which it estimated unemployment above 12-million in 1932 and nearly 8-million in 1937. The unions hold up those figures, when it suits their purpose, as horrible examples; few among them find fault with the methods by which those counts were made. This weakens their grounds for complaints now.

STOP "BLOOD CLOTS"

WITH THE WORLD'S GREATEST LUBRICATION KNOWLEDGE



CLEANER LIFE-LINES FOR YOUR MACHINES!

**Famous Socony-Vacuum
Hydraulic Oils
Again Improved**

★

**Backed by Skilled
Engineering Service**

★

**For GREATER OUTPUT
Rely on the BEST!**

From now on, the "heart" of your hydraulic machines—the oil pump—will be able to push new "blood" into machine life-lines. Famous Gargoyle D.T.E. Oils—the oils that have set hydraulic performance standards for years—have been *still further improved* to protect against oxidation deposits (blood clots), rust and wear. They're available now in volume, backed by our 83 years' lubrication experience and skilled engineering service. Put them to work for longer machine life, more continuous production.



SOCONY-VACUUM OIL CO., INC.
and Affiliates: MAGNOLIA PETROLEUM CO.
GENERAL PETROLEUM CORPORATION

Rely on **SOCONY-VACUUM**
Correct Lubrication

How to bite into a rock sandwich

WHEN you go looking for oil nowadays you don't have to use guesswork. Geologists can find out exactly where the best deposits in an oil field are, and how to reach them, by taking samples of the strata deep underground.

A hollow, diamond-studded bit, fitted to a hollow steel barrel, 30 to 90 feet long, is used to cut sample cores out of the rock strata thousands of feet underground. And these cores—small bites of a huge rock sandwich—tell the driller what he needs to know to track down the oil.

This tough drilling job imposes enormous twisting stresses on the hollow core

barrel that turns the bit and retains the core until it is withdrawn from the hole. If the core barrel fails, the valuable bit is lost; expensive, time-consuming salvage operations are necessary.

Anxious to find a stronger, more reliable steel for core barrels, a manufacturer consulted metallurgists of The Timken Roller Bearing Company. After careful studies they recommended a standard Timken seamless tubing for the job. Put to the test, core barrels made of the Timken tubing proved their ability to absorb longitudinal and twisting stresses under the most punishing conditions. And they've been proving themselves

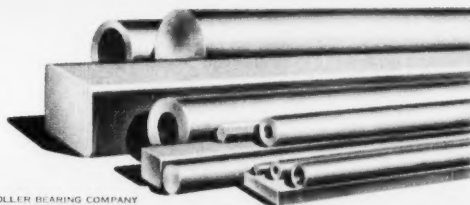
in service ever since. The risk of bit losses has been greatly reduced and exploration work has been speeded.

This is yet another of the tough steel problems that have been stamped "Solved—by Timken Alloy Steel". No other alloy steel producer has equalled this record of difficult steel problems solved.

Why not let us go to work on *your* steel problems today? Write The Timken Roller Bearing Company, Steel and Tube Division, Canton 6, Ohio. Cable address: "TIMROSCO". Tapered Roller Bearings, Alloy Steels and Seamless Tubing, Removable Rock Bits.



YEARS AHEAD—THROUGH EXPERIENCE AND RESEARCH



CORP., 1945 THE TIMKEN ROLLER BEARING COMPANY

TIMKEN
TRADE-MARK U.S. & PAT. OFF.
Fine Alloy
STEEL
and Seamless Tubes